JOURNAL
OF THE
Association of American Medical Colleges

Volume 14 MAY, 1939 Number 3

The Teaching of Syphilis*

JOSEPH EARLE MOORE
Associate in Medicine, Johns Hopkins University School of Medicine
Baltimore, Maryland

I

THE CENTRALIZATION OF THE PROFESSIONAL CARE OF SYPHILITIC PATIENTS: AN ACCOMPLISHED FACT

Prior to 1910, in practically all large hospitals in this country, teaching hospitals as well as others, the management and teaching of syphilis were undertaken in every outpatient and inpatient department. The patient with primary syphilis, if he was a male, usually went, first, to the urologist; if a female, to the gynecologist. The diagnosis was arrived at on clinical grounds and the patient treated by the ineffectual methods then in vogue; usually only until the presenting lesion healed. Inasmuch as the mercurial treatment of syphilis by whatever route was comparatively unsatisfactory, there were numerous instances either of relapse or of delayed secondary syphilis. When the generalized lesions of the disease began to develop, the patient might appear next in the department of dermatology for the differential diagnosis of his skin rash; or, alternatively, in the department of laryngology with mucous lesions in the mouth or throat; or in the department of ophthalmology with iritis; or even in the orthopedic clinic with the early bone and joint symptoms of the generalized infection. In each of these clinics, again, the diagnosis was, perhaps, made correctly on the basis of morphologic differentiation between syphilis and other diseases, and more treatment was administered until the lesions healed. It was a rare clinic, indeed, in which interest in syphilitic infection was great enough to keep the patient under treatment for the three to five years thought to be necessary during the mercurial era.

Following the disappearance of early lesions, the patient entered, then, as he does now, if untreated, on a long period of latency. During the next few years, he was likely to turn up in one of the medical clinics of the hospital with vague complaints which might or might not be recognized as related to his previous syphilitic infection; or alternatively, if the patient was a woman, in the department of obstetrics, where, for lack of recognition of the mother as a syphilitic, of adequate treatment, or of both, a syphilitic child was born.

---

*Read at the Forty-Ninth Annual Meeting of the Association of American Medical Colleges held in Syracuse, New York, October 24-26, 1938.
From the Syphilis Division of the Medical Clinic, the Johns Hopkins University and Hospital.

Later still, when the tertiary manifestations of the disease began to appear, the patient might report to any one of the hospital departments; most often, perhaps, to dermatology with late cutaneous syphilides; or to orthopedics or general surgery with bone lesions, into the differential diagnosis of which the department of radiology was frequently called. The departments of laryngology and ophthalmology were required to deal with gummatous lesions of the nose and throat or with the late ocular manifestations of the disease. Again, treatment was usually given in any one of these departments, and usually only to the point of relief of the presenting symptoms or lesions. When this was accomplished, the patient was again lost from observation.

Still later he might appear in the medical outpatient department with a condition sufficiently grave to necessitate hospitalization; for example, syphilis of the liver or the unhappily frequent cardiovascular sequels of aortic insufficiency or aneurysm. Finally, completing the picture of the acquired disease, he was prone to finish his career as patient in the departments of neurology or psychiatry with tabes dorsalis, general paresis, or various other forms of central nervous system syphilis. When these dismal stages of the infection had been reached, the tendency was, in most hospitals, to despair of further therapeutic relief and to take the position that nothing further could be done except hospitalization for the chronically ill.

Not only the diagnosis but also the treatment of syphilis was, therefore, widely dispersed. Every medical specialty was involved. The net result of this form of management of the infection was to provide the poorest possible treatment for the individual patient, since practically no one was cured, and the grave late sequels of the disease were not prevented. From the standpoint of the public health, there was little or no appreciation of the fact that syphilis was an infectious disease, the appalling incidence of which might be, but was not, reduced by an appropriate public health approach; and from the standpoint of instruction of medical students, information as to the diagnosis and treatment of an important disease was scattered, often contradictory and wholly inefficient.

The advent of the several discoveries of the seven year period, 1903 to 1910, namely, the transmission of the disease to animals, the discovery of the causative organism, the development of the Wassermann blood test, and the discovery of arsphenamin, placed the diagnosis and treatment of syphilis on a much firmer basis than had heretofore been possible. The technical laboratory and treatment procedures involved after these discoveries necessitated, in most institutions, a complete change in the management of the infection. It was found desirable everywhere to centralize the management of syphilis in a single department, and in most large hospitals this has now been done.

II

THE CENTRALIZATION OF THE TEACHING OF SYPHILIS:— A TASK FOR THE FUTURE

As syphilis was managed in the years prior to 1905, so is it still often taught. The student comes into contact with syphilis in every department of the medical

school. He encounters it first in pathology, where he learns the gross and microscopic alterations in the tissues which the infection may produce. In bacteriology, he learns something of the causative organism, the *Treponema pallidum,* and if he is fortunate in his instructor, he may have an opportunity to see the living germ by dark field together with other spirochetes. Courses in immunology and serology are usually combined with those in bacteriology; and here the student sometimes learns too much technical detail of serologic tests before he possesses the fundamental knowledge which permits him to utilize them in interpretation.

When he enters the clinical field, he progresses through the major departments of medicine and surgery, in each of which he is faced with the differential diagnosis of the lesions of late syphilis. In obstetrics, he is taught the influence of syphilis on pregnancy. In pediatrics, he is instructed concerning the widespread range of manifestations of infantile and late congenital syphilis. In psychiatry, and relatively early in his clinical career, he begins to see the end results of syphilitic infection in broken-down paretics. In the several surgical specialties, he is confronted with a particular wealth of syphilitic material. In ophthalmology, he must learn something of the differential diagnosis of the commoner syphilitic eye lesions; and in neurology he is confronted with the intricate diagnostic problems of neurosyphilis.

In all of these departments, and quite properly so, emphasis is laid on clinical differential diagnosis. I have elsewhere published a list[1] of about 200 comparatively common diseases, divided by medical and surgical specialties, which may so closely mimic or be imitated by syphilis as to require detailed consideration in differentiation. It is entirely proper that detailed instruction in clinical differentiation be given by each clinical department; indeed, it could not be managed otherwise.

However, the order of approach to the diagnosis of syphilis is such that the student obtains a distorted idea of syphilitic infection as an entity. Usually, he learns something about early syphilis long after he is reasonably familiar with the late manifestations of the disease. Almost always he is led to believe that syphilis consists of a series of isolated manifestations which appear to have no clear connection with each other. Often the diagnostic information obtained from one clinical department is directly contradictory of that obtained from another. This dispersion of instruction, moreover, fails to provide any information concerning the epidemiologic and public health aspects of syphilis; and from the instructors in the various departments, the student obtains widely varying and wholly inadequate ideas as to treatment.

What many medical schools lack are the teaching facilities to tie together this pot-pourri of information into an organized whole. Just as it was essential twenty-five or thirty years ago to reorganize the professional care of syphilitic patients, by their concentration into a single department of the hospital, so is it now necessary to centralize its teaching. The student must, if he is

1. Moore, J. E.: The Diagnosis of Syphilis by the General Practitioner, Ven. Dis. Inform., Supplement No. 5, 1938.

to be reasonably expert in diagnosis, and if, the diagnosis once made, he is to manage his patients correctly, be given instruction which organizes all the diffuse information gathered from every clinical department into a single entity. He must be taught to appreciate syphilis as an infection, beginning with the chancre and ending with the "cure" or death of the individual, which progresses in reasonably orderly sequence. He must be enabled to view the infected individual as a patient rather than the disease as a series of isolated manifestations.

The centralization of such teaching in a single department is fortunately readily possible, since the professional care of syphilitic patients has already been so organized. The instruction given by this department should lay stress not, as in other courses in clinical medicine, on the differential diagnosis of syphilitic lesions; but, instead, on certain fundamental and comparatively elementary principles of diagnosis and treatment. In diagnosis, these principles are:

1. Syphilis is a prevalent disease.
2. Syphilis may often imitate or be imitated by other diseases.
3. Knowledge is essential, at least of the names, if not of the intricate details of differential diagnosis, of those diseases causing most diagnostic confusion.
4. When confronted with any of these diagnositic possibilities, the student or physician should suspect syphilis.
5. Modern laboratory tests are 95 per cent efficient in the diagnosis of untreated syphilis.
6. Clinical suspicion must always be checked by these laboratory tests.
7. The diagnosis of early syphilis is wholly a laboratory, not a clinical procedure.

In public health the important principles are:

1. Syphilis is highly infectious during its acute phases.
2. For every case of acute syphilis, there is a source of infection.
3. This source spreads disease; it must be traced and rendered noninfectious, as must also all individuals whom the patient himself may have exposed.
4. The arsphenamines and bismuth, in adequate amounts and by an appropriate system, control infectiousness.

In treatment, the important principles are:

1. The foundations for the serious late manifestations of syphilis are laid in the early stages of the infection.
2. The early stage is the important stage to treat, both from the individual and public health points of view.
3. Even after the golden opportunity of early treatment is past, congenital syphilis may be prevented; many of the late sequels can be forestalled; and symptomatic relief can often be obtained, even in apparently hopeless situations, by the adequate treatment of latent or chronic syphilis.

In addition, it must constantly be repeated that syphilis is a chronically relapsing disease, and the time relationships and the clinical characteristics of relapse and their relationship to infectiousness must be emphasized. Both in diagnosis and treatment, special stress must be laid on the two commonest late manifestations of the disease, cardiovascular and neurosyphilis. The student must know something of the economic aspects of treatment; of the fact that the proper management, even of the uncomplicated case, is a long drawn out, expensive procedure. He must become expert in certain technical procedures in treatment, namely venipuncture, lumbar puncture, the technic of intramuscular injection. He must know something of the effect of drugs on the lesions of syphilis and, more particularly, on the patient himself. It does not suffice to cure syphilis and kill the patient. The mechanism of drug action, the toxic manifestations produced by the several drugs used in treatment, the choice of proper drugs for the individual patient, are all items with which he must become thoroughly familiar. He must learn that the treatment of early syphilis is a standardized procedure which should be carried out in every instance by a routine from which no deviation is permitted, except in the case of treatment reactions or complicating diseases. He must know that the treatment of late syphilis is individualized rather than standardized, its intricacy often demanding wide clinical experience; and he must be aware of his own limitations in attempting the management of the late sequels. He must understand that often his best procedure is consultation with the expert when he encounters a situation with which he is not thoroughly familiar.

At Johns Hopkins University School of Medicine, the accomplishment of these aims is carried out comparatively simply. During the last quarter of the second year, the student receives a course of four elementary lectures which attempt to present little more about syphilis than should be known by the well educated layman. In these lectures, emphasis is laid on the continued story of syphilis from beginning to end, with particular stress on its biologic aspects. During the third year, the student does not have direct contact with the Department of Syphilis; such information as he acquires concerning the disease comes from the several clinical departments which he must obligatorily attend during that year. In the fourth year, the facilities of the outpatient department are available to the class on an elective basis. Those electing the course, i. e., practically all of the students in the class, attend in small groups, three times a week, for one quarter of the school year, an average of twenty-four clinic sessions each from two to three hours duration. During this period, the student spends eight clinic sessions familiarizing himself with the technic of treatment. In the remaining sixteen sessions, he has the opportunity to examine patients presenting various forms of syphilitic infection, a definite effort being made to see that he observes patients in all stages of the disease. In the last quarter of the fourth year, the entire class is given a series of eight clinic demonstrations in which an effort is made to correlate all of the information which the student has himself gathered in the Syphilis Department and elsewhere, and to emphasize the fundamental principles of diagnosis and treat-

ment. The total number of hours devoted to special instruction in syphilis is, therefore, sixty, of which twelve are required and are didactic or semi-didactic; forty-eight are elective and practical.

III

WHO SHALL TEACH SYPHILIS?

An interesting debate has been carried on for many years as to which is the proper medical specialty to undertake the management and teaching of syphilis in medical schools and teaching hospitals. In France and Germany, even prior to the modern period inaugurated in 1903, syphilology had become closely associated with the specialty of dermatology, influenced largely by the work of such brilliant clinicians as the elder Fournier and his pupils, and by the fact that in those days the majority of cases of recognizable syphilis presented cutaneous manifestations. What more natural in this country, therefore, with physicians strongly swayed by French and German postgraduate education, than that here, too, departments of dermatology and syphilology began to be formed? Even this was not accomplished without difficulty, and in 1917, Fordyce,[2] the first great American syphilologist, found it necessary to present a powerful plea for the centralization of the management and teaching of syphilis within a single department.

As Fordyce himself pointed out, however, the advancements in clinical knowledge provided by the developments of the modern era necessitated much more than a knowledge of morphologic dermatology. The advent of the Wassermann test lessened the proportion of patients with cutaneous lesions (a trend to which the widespread use of the arsphenamines also contributed), and vastly increased the importance of late visceral and neurologic manifestations. The competent syphilologist, therefore, whether in his capacity as clinician or teacher, must have a knowledge of physiology and pharmacology, adequate to permit him to understand the mechanisms of therapeutic activity and toxicity of powerful drugs; of internal medicine, adequate to permit him to recognize, properly evaluate and treat not only the frequent and important late visceral and neurologic manifestations of syphilis but also a host of complicating diseases; of neurology, adequate for differential diagnosis in this difficult field; of psychiatry, adequate to allow not only the early and accurate recognition of general paresis and its differentiation from other psychoses, but also to assist in the guidance of his patient through the difficult social and personal problems which syphilis imposes; of ophthalmology, ample for understanding the diagnosis of ocular syphilis and the special details of treatment necessary for preservation of vision; of serology, adequate for the accurate interpretation, if not the actual performance, of intricate biologic tests; and of public health, adequate to make his efforts toward the eradication of syphilis effective.

This congery of necessary knowledge is a large order. If it approaches closely the old humorous definition of a "general specialist," i. e., one who knows less and less about more and more until finally he knows nothing about

2. Fordyce, J. A.: The Teaching of Syphilis, J. Cutan. Dis., 35:7117, 1917.

everything, this cannot be helped. The recognition of its truth has, however, led to some soul searching on the part of physicians in general and of dermatologists in particular. The proprietary interest of dermatologists in the entire field of syphilis was summarized by Kirby-Smith[3] in 1927. That at least some self-interest enters into the debate is suggested by Riley,[4] who said, in expressing the neurologist's point of view, that the diagnosis and treatment of neurosyphilis was the prerogative of the specialty of neurology: "A reasonable increase of aggressiveness on the part of the neurologist in both the diagnostic and therapeutic spheres of activity (as to syphilis)* would redound to the benefit *of the specialty** and of the patient . . . But what excuse is there for the neurologist to sit idly by and watch the exploitation of the treatment of syphilis of the central nervous system by syphilologists and dermatologists?"

Recently, the debate has been carried forward by Morgan,[5] who defends the position that the internist should be, if actually he is not, a major factor in the teaching, individual management, and public health control of syphilis. Kampmeier,[6] of Morgan's clinic, provides a most illuminating description of teaching methods in a clinic where the staff and method of approach are primarily medical rather than dermatologic.

Still more recently, Goldman,[7] discussing the relationship of dermatology to syphilology, points out that the dermatologist will continue to be an important factor in the syphilis field only as he continues to improve his knowledge and technic in the study of visceral syphilis. Goldman's article provoked editorial comment from Fox,[8] who notes, with regret, that in a few medical schools in this country the two subjects have been divorced, and syphilology has become a separate department or a subdepartment of medicine. He hopes that this trend will not continue.

As a matter of fact, a partial list of medical schools in which syphilology has been partly or wholly separated from dermatology within the last twenty-five years includes Johns Hopkins, where the Syphilis Division of the Medical Clinic was modestly begun twenty-five years ago under the direction of Albert Keidel; later, and largely influenced by men who had worked in or observed the advantages of this clinic, followed Yale, Vanderbilt, Duke, Leland Stanford, Cornell, Georgia and New York Universities. Still others are known to be considering the step.

The dermatologic fear of suit for divorce by syphilis has even necessitated an official communication from the Surgeon General of the United States Public Health Service, who is the mainspring of the syphilis control program, to the Chairman of the Advisory Committee on Syphilis Control of the American Dermatological Association,[9] denying that the Public Health Service has any

---

*Parenthetical words and italics mine.

3. Kirby-Smith, J. L.: Are We Dermatologists Syphilologists? South. M. J., 21:42, 1928.
4. Riley, H. A.: Training of the Neurologist, Arch. Neurol. & Psychiat., 29:862, 1933.
5. Morgan, H. J.: The Internist and the Syphilis Control Program, Ann. Int. Med. 11:469, 1937.
6. Kampmeier, R. H.: The Teaching of Syphilis to Undergraduates and Postgraduates. South. M. J., 31:218, 1938.
7. Goldman, L.: Dermatology with Syphilology. Arch. Dermat. & Syph. 37:990, 1938.
8. Fox, H.: Dermatology with Syphilology, Arch. Dermat. & Syph., 37:1046, 1938.
9. Parran, T.: Dermatologists in the Campaign Against Syphilis, Arch. Dermat. & Syph., 37:1048, 1938.

intention of excluding dermatologists from an important rôle, and pointing out that the problem is so vast that the services of all physicians will be needed.

To one who has been engaged in the management and teaching of syphilis for the past twenty years, the insistence that dermatology has a proprietary interest in syphilis, or that any particular phase of syphilis is the especial property of any other specialty, as, for example, neurosyphilis of neurology, represents wishful thinking. It seems obvious, clear, and even elementary that the physician most capable of teaching syphilis is not necessarily primarily trained as a dermatologist, internist, or neurologist. *Instead, he should be one who knows something about syphilis in all its phases, whatever his original special training.* This is the point of view ably defended by Robinson.[10] In my own opinion, of course, a knowledge of syphilis in all its phases is much more readily acquired by the physician with a sound background of internal medicine than with that of any other medical discipline. It is true that the syphilologically minded internist must also have an adequate working knowledge of diagnostic if not of therapeutic dermatology; but by and large it is easier for him to acquire proficiency in this relatively limited field than for the dermatologist to acquire the necessary skill in internal medicine.

The real reason for including syphilology in any other field of medicine, putting aside the dermatologic and neurologic sense of loss of prestige if it escapes them, is wholly practical. It lies in the moral taboo which still surrounds syphilis. The practitioner who sees private syphilitic patients must also engage in some other form of medical practice, at least for camouflage. If he does not, all his patients recognize each other as syphilitic, and preferring greater privacy, seek another physician. If it were not for this taboo, syphilology alone would at once, and by its own right and merit, attain the rank of a separate specialty, as tuberculosis has long since done. But whether the syphilologist conceals his major interest under the cloak of internal medicine, dermatology, neurology, or any other medical specialty, matters not in the least, provided that he really knows syphilis.

A search for teachers of syphilis to medical students, then, should start not from a specialty of medicine, but from a man. What is wanted is not necessarily an "-ist" of any sort (unless one accept as justifiable the term "syphilologist"), but a physician whose major interest lies in an understanding of syphilis, its diagnosis, treatment and public health control. In medical schools where such teachers are not now available every effort should be made to develop them.

---

10. Robinson, H. M.: Shall the Dermatologist Include Syphilis in His Field? South. M. J., 31:567, 1938.

Clinical Clerkships for Undergraduate Students*

CHARLES A. FLOOD
Assistant Dean
Columbia University College of Physicians and Surgeons
New York City

The clinical clerkship has been developed as a part of undergraduate medical instruction in order to provide a practical clinical experience for the medical student. The clerkship is analogous, in a sense, to the laboratory work in the basic sciences in the first two medical years and constitutes the most essential part of the program of instruction in medicine and surgery.

The primary objectives of the clerkship are definite and there is general agreement concerning them. The clerkship trains the undergraduate in the methods of approach in the study of patients. It affords an opportunity for the student to learn to recognize the commoner disease entities encountered in clinical medicine and surgery. Opportunity is also provided for the student to study and interpret disease in terms of his knowledge of the basic medical sciences of anatomy, physiology, chemistry, bacteriology and pathology. Thus an integration is effected between clinical medicine and the work of the first two years in the medical school.

One of the most important characteristics of the satisfactory clinical clerkship is the degree of responsibility which the student is permitted to assume in the study and care of patients in the wards and clinics of the university hospital. It is very discouraging to a medical student to feel that the work which he is doing as a clinical clerk does not contribute to the care of the patient. Efforts should be made to give the student a sense of real responsibility and he should be an essential member of the staff organization of the hospital.

HOSPITAL CLERKSHIPS: For a number of years at Columbia, third year students have been obtaining their training in the hospital wards rather than in the dispensary. The advantages of this type of arrangement have been repeatedly described as have also some of the disadvantages. The majority of ward patients suffer from advanced organic disease and seem particularly suited to the teaching of students who are just beginning their clinical studies. The fact that the ward patient is continuously available for study and may be followed daily over a period of many weeks is also of advantage in teaching third year students who require ample time to familiarize themselves with the findings in their patients. When the ward clerkship is given in the third year and dispensary work is postponed until the fourth year, it becomes essential to organize the outpatient clerkship in such a way that the student receive more responsibility and opportunity than he had on the wards, a difficult undertaking.

*Read at the Forty-ninth Annual Meeting of the Association of American Medical Colleges held in Syracuse, New York, October 24-26, 1938.

The third year student enters the hospital wards having had some instruction in physical diagnosis and clinical pathology but usually without experience in taking histories. After he has become oriented and has been drilled in the technique of history taking and in the other duties which he is to fulfill as a clinical clerk, there are many ways in which he can be permitted to participate actively in the work of the medical service. The work of the clerk is supplementary to that which is required of the interns on the hospital service and a number of the intern's duties may gradually be delegated to him.

After the student has had some practice in taking patients' histories, he may assume the duty of taking the official history for the hospital record, subject to review and correction by the instructor. Much of the responsibility for routine laboratory work may also be assumed by the third (or fourth) year students. The routine examinations of urine, stool and blood, which are required in the study of patients, may be carried out by the clinical clerks in those cases to which they are assigned on the wards. Certain of the simpler ward treatments and technical diagnostic procedures, such as hypodermoclyses, infusions, venipunctures, and the like, may also gradually be assumed by the student under the supervision of the intern staff.

Recently, at Columbia, the student has been permitted to write the admission orders on his ward patients under the direct guidance of the house physician. Arrangements have also been made whereby students remain on twenty-four hour call at intervals in order that they may be in a position to see their patients immediately after hospital admission. In this way, the student is enabled to see such medical emergencies as coronary thrombosis, lobar pneumonia and diabetic coma, whereas he otherwise might not be able to examine patients with such disorders until they had become less acutely ill. In company with the house physician, he examines patients immediately on admission and is enabled to see problems at first hand before the institution of any therapy.

In this manner, an effort is made to make the student feel that he is an integral part of the hospital organization and that his contribution to the care of patients is an essential one. The student assumes the above mentioned duties gradually and his work must be checked carefully by his instructor and by the house officers connected with the service. In this connection, it should be noted that the hospital intern may play an important rôle in the education of the clinical clerk. Closer to the student in age, and in some ways better able to appreciate the problems which confront the undergraduate, the intern is in a position to check many of the student's findings and to give a considerable amount of informal instruction as he comes in contact with the student.

The same principles of graded responsibility and active participation in the study and care of patients also apply to the surgical clinical clerkship and to outpatient clerkships. On the surgical wards, the clinical clerks can be given much the same duties as they have on the medical service. The problem is more complicated because much of the time of the surgical staff is devoted to operations or other technical procedures in which the undergraduate student can be of very

little assistance. The methods of approach in diagnosis, however, are the same, and in this phase of the work the student may be given duties which are similar to those undertaken in general medicine.

Outpatient Clerkships: In the outpatient department, there are certain problems which make the organization of the clerkship for fourth year students rather difficult. The patient in the dispensary, in contrast with the patient on the wards, is usually under the direct management of a single physician rather than a staff of doctors. Responsibilities are, therefore, shared by one instructor with the clinical clerk. The instructor must check and supervise everything that the student does in the dispensary. On the hospital wards where the patient is usually seen and examined by a number of interns and attending physicians, the instructor's job is an easier one and the opportunities for the student to do something which might be detrimental to the interests of the patient are negligible.

There are other difficulties which characterize outpatient teaching. The clinic hours are comparatively short and the amount of time available for the student to examine new patients is limited. When students are unusually slow in examining new patients, there is often little time remaining for reviewing and discussing the findings with the instructor. It is also difficult to work out a schedule for the outpatient clerkship which will enable the student to see the same patients repeatedly over a long period of time. Many medical patients require clinic care extending over a period of many months. When the patient returns on follow-up visits, the student may be too busy with other work in the clinic to see him or he may have been assigned to other teaching departments. The teaching problem in the outpatient department is also complicated by the fact that the attending staff is often largely composed of younger men, in spite of the fact that the medicine which is practised in the dispensary is more difficult than ward medicine and would try the skill of the more experienced senior members of the teaching staff.

The salient problem in dispensary teaching in the fourth year is that of giving the student more responsibility and a wider range of clinical experience than he had as a ward clerk. Unless this is done, the work of the fourth year becomes an anticlimax and is, in fact, a comparatively uninteresting repetition of the kind of work done on the wards in the third year. The fourth year student may, in one more year, be expected to work as an intern in the outpatient department of a hospital under a comparative lack of supervision. He may be expected to work up patients, to obtain significant laboratory diagnostic tests, to give instructions to patients for treatment and to evaluate the results of therapy in revisits to the clinic, all more or less independently. The preparation for such an assignment is largely accomplished in the fourth year. This is partly the difficult task of the instructor whose office it is to supervise and direct the activities of the fourth year clinical clerk.

Teaching of Internal Medicine: Another problem in the teaching of internal medicine concerns the scope of this subject as it is presented to undergraduates. Internal medicine is a broader field than many of the other third

and fourth year subjects and, furthermore, it deals with the problems of the patient as a whole in contrast to some of the specialties where attention is largely directed to some localized condition. It is a difficult subject to teach comprehensively. In the course of the ward clerkship in medicine, the student may work up twenty or twenty-five cases. He may have an opportunity to observe at close range patients belonging to other members of his section who present perhaps twenty-five or thirty other ailments. Even with the additional experience in the outpatient department, there will be numerous diseases, not especially rare, which the student has not had an opportunity to study at first hand. It is, therefore, necessary to devote a considerable amount of time to lectures, clinical demonstrations and conferences in order to enable the student to learn about those conditions which he does not see during the period of the clerkship. While these more didactic methods of instruction seem less desirable, it is, nevertheless, true that a large proportion of the student body after graduation will have comparatively little experience as interns on hospital services in internal medicine. Hence, the scope of instruction in internal medicine in the medical school should be as complete as possible.

Laboratory Aids in Diagnosis: In the course of his experience as clinical clerk a student becomes familiar with a large number of disease patterns and learns the application of laboratory aids in diagnosis. Through observation, at lectures and by reading, he begins to acquire judgment in problems of differential diagnosis and to learn something of applied therapeutics. In the modern university hospital the program of the study of patients extends considerably further, however. The interests of the teaching staff are centered about problems concerning the altered mechanisms which underlie disease processes. Methods have become available for studying the physiologic abnormalities which underlie the symptoms, signs and abnormal laboratory findings in disease. These studies are made possible by the development of newer laboratory methods for the precise appraisal of physiologic and chemical disturbances as they are encountered clinically. Clinical syndromes are now interpreted more readily in terms of the knowledge which students have acquired during their studies in the basic sciences of the first two years.

These newer developments are influencing the point of view in undergraduate instruction. There is a much more precise understanding today of the mechanisms which underlie the signs and symptoms of disease than existed a short time ago. In teaching students, there is less emphasis on memorizing disease patterns and more time is devoted to the understanding of clinical findings in terms of physiology, chemistry and pathology.

This shift in emphasis is far from being an unmixed blessing, however. There is a very real danger of exaggerating the importance of the laboratory in clinical medicine, while neglecting the simpler techniques of history taking and physical diagnosis on which the sound practice of medicine depends in a considerable degree. The undergraduate student needs to be protected from learning to depend too heavily on laboratory procedures which may not be readily available when he goes into practice.

A well balanced clinical clerkship should stimulate the enthusiasm of some of the students for original study of problems in medicine. Opportunities should be available for a certain number of men to carry on some study of their own or to participate in research work being carried on by members of the teaching staff. Thus some men will be stimulated to work toward the advancement of medical knowledge.

The clerkship represents the beginning of that period of supervised clinical experience which blends later with the internship and still later with the hospital residency. As in a good internship, so in a good clerkship there should be opportunities for the student to assume a measured degree of responsibility, to study and follow closely the progress of individual patients, and finally to learn to interpret disease in terms of underlying physiologic mechanisms.

Use of the Home Delivery Service in Syracuse in The Teaching of Obstetrics*

EDWARD C. HUGHES
Associate Professor of Obstetrics, Syracuse University College of Medicine
Syracuse, New York

A review of the history of obstetrics has revealed that since the beginning of the world very little attention was given to the process of childbirth. It has always been considered in an indifferent manner and as a simple, physiological process. Its importance has never been on the same basis as other branches of medicine. This indifferent attitude through the centuries has been largely responsible for the retardation in the progress of its practice and teaching. In early times, physicians themselves were never interested in obstetrics. Until the seventh century, when Paul Egineta, a Greek physician, acclaimed himself the first male midwife, this work was done exclusively by midwives. In 1543, when Vesalius was giving to the world the first accurate description of the bony pelvis, the honor of this art was sought for by unskilled barbers and midwives. As late as 1780, when Hunter was attempting to teach the subject in a scientific manner, obstetric tragedies were considered as acts of the gods. So, on down through the centuries, this lack of interest has prevailed in the minds of physicians as well as the laity. It has not been until recently that the world has awakened to the fact that too many lives of mothers and infants are lost each year.

In those early times, childbirth may have been a normal physiologic process —labor without pain, and parturition free from dangers. But the rapidly progressing changes in civilization and modes of living have had an influence on the parturient woman. It has made her more susceptable to pain and the perils that are now considered incident to childbirth. It is only in the past twelve years that this has been realized. Consequently, as a result of all this, the improvement in practicing and teaching obstetrics has not kept pace with ever changing womankind. The importance of this subject has been so underestimated that in many medical colleges far fewer hours are allotted to obstetrics than to other branches of medicine. Survey and analyses of the maternal death rate in the world have shown that the teaching, although adequate enough, perhaps, as far as theory is concerned, lacks the practical or clinical emphasis.

It seems, then, as though attempts should be made to supply adequate clinical material so that the teaching can be improved along these lines. Inasmuch as only 15 per cent of graduates will choose obstetrics as their life work, and the majority of babies are delivered by the general practitioner, it seems that the teaching of this subject should be directed particularly to that group of men and women. No attempt should be made in the undergraduate curriculum to make obstetric specialists. That instruction should be delegated to the

*Read at the Forty-ninth Annual Meeting of the Association of American Medical Colleges held in Syracuse, New York, October 24-26, 1938.

postgraduate schools and the hospitals which specialize in this branch. With this in mind, the obstetrics teaching at Syracuse University, after laying a foundation of didactic work, has emphasized the clinical side. This has been done particularly in connection with deliveries conducted in the home. We feel that this service, if supervised adequately, as it has been in Syracuse, has accomplished the following things as far as the student is concerned:

1. It has brought the student in contact with the home life of the patient.

2. It has put the student on his own resources, and has made him shoulder responsibilities.

3. It has taught him sonservatism.

4. It has trained him to realize his own limitations in handling complications.

5. It has given him the opportunity to think the case over, and observe the process of labor in this way.

6. It has given him an idea of the equipment necessary for home deliveries, and taught him how to make the necessary arrangements.

7. By association with the instructor he has learned the methods of examination and discovered his errors.

On these grounds, it has been felt that home deliveries, if supervised properly, is a practical and excellent way to teach the medical student. These convictions led to the formation of the home delivery service in 1926 under the direction of the professor of obstetrics, Dr. Henry W. Schoeneck. His farsighted vision of the future of obstetrics in the city, his enthusiasm to improve the teaching in Syracuse University, and his whole-hearted desire to bring to the poor families in this city a safe, well-supervised type of maternity care has not only brought this service to realization, but has acted as an inspiration and stimulus to those who are connected with his department.

The development of such a maternity unit has depended on several things:

1. A large amount of clinical material had to be always available for adequate teaching.

2. The personnel of the department had to be trained especially in order that the teaching be uniform and of high quality.

3. There had to be cooperation between the College of Medicine, the Nursing Bureau of the Health Department of the City and the Visiting Nurse Association.

4. These departments had to be related closely to the welfare and social service departments as well as other departments of medicine.

With this in mind, through the cooperation of the members of the Department of Obstetrics, operations were started and have been well systematized. As a result of its efficiency and the results obtained, the patients are eager to place themselves under its supervision and care. With its success, the amount of clinical material has increased markedly so that today we operate nine prenatal clinics in the City. From these clinics material has been obtained for teaching in the home as well as in the hospital. Having realized that the source

of material must not be neglected, and that every effort must be made to keep the supply constant, it was found that the best results were obtained in the following ways. Perhaps, the most certain way of obtaining material for our clinics has been through the efforts of the two nursing groups connected with the department, namely, the Visiting Nurse Association and the Nursing Bureau of the Health Department. These groups of nurses have been watching constantly for patients and encouraging them to attend the clinics. Through their Mothers' Clubs, patients have been trained in infant care, and have been persuaded to attend the clinics for their own supervision. During the past five years, 4,283 mothers have attended these clubs. During the last year, the formation of another club has been necessary and the attendance is increasing regularly. The Social Service Department has investigated each case as to its eligibility for the service, and has been another source for enlarging clinic rolls. A considerable number of cases have been received from private physicians, and care has always been taken to refer these individuals back to their original sources. Perhaps, the best way to keep the attendance in the clinics on the increase has been the assurance given these women of a safe, well supervised type of care. Statistics show the references were as follows:

Nurses	23.2%
Doctors	8.4%
Self	36 %
Other Patients	20 %
Other Agencies	22 %

Even with all the various ways followed to secure these cases, we have felt that the amount of material has not been sufficient. There probably does not exist enough clinical material in any college location in the country, although the same efforts are probably being exerted. This lack of clinical material is one of the handicaps in the teaching of medical students. However, we feel as Dr. Weiskotten states in his article on obstetric teaching in the *American Journal of Obstetrics,* "that it is more important how well the subject is taught than how much is taught."

With this in mind, the College of Medicine has furnished supervision on all of the available work. It has demanded that the members of its obstetrics staff be specially trained in obstetrics and gynecology. These men have, therefore, been able to train the students properly, and to give expert attention to the patients. These physicians have supervised the teaching in the clinics. They have been present during labor and delivery in the home. They have also been on service in the hospital, taking an active part in teaching in the ward work. This has offered an excellent opportunity for the young specialist who is properly trained, and also has assured the College of Medicine that the teaching in these three divisions is under special supervision. We have felt that this thoroughness has been the strong point in our teaching.

All members of the Department have served without remuneration. However, instructors have been rewarded for their presence at the home deliveries with a fee of $10.00. This fee has been paid by the Visiting Nurse Association.

However this organization has not paid these men from their own funds. The association is repaid either by the Department of Welfare or, in a few cases, by the patient who can afford this amount and who does not have a private physician. While this is not adequate pay for the instructor, it has been sufficient to hold his interest. We have been particularly fortunate in having a group of men who are interested and loyal. They have given excellent service and we are indebted to them.

Having discussed the ways and means of keeping the amount of clinical material always maximum, and the thoroughness of supervision by the members of the Department, it is interesting to relate the unique yet complex workings of the service itself. It has been an interesting plan in the care of the indigent. Besides having as its main purpose the instruction of students, it has served as a real public service to the City of Syracuse. It has embraced many phases. It has promoted better and more complete nursing care. It has been educational, psychological, nutritional and even industrial to the patient. It has necessitated a close relationship between the College of Medicine, the Visiting Nurse Association and the Health Department of the City. All three parties have contributed to the program. The College of Medicine, being interested in the teaching and the care of the indigent, has been the controlling factor. It has staffed the clinics with members from its department; it has governed the policies of the nursing staff and program; it has cooperated with the Department of Health in perfecting its service. Besides these things, the College of Medicine has furnished the equipment and material used for the home deliveries.

The nursing care has been divided between the Visiting Nurse Association and the Nursing Bureau of the Department of Health. They have supplied the service in the following manner:

1. The prenatal clinics have been maintained by the Health Department, and nurses from this department have operated these clinics.

2. The home nursing supervision during the prenatal period has been supplied by both the staff of the Nursing Bureau and the Visiting Nurse Association.

3. The delivery nursing service in the hospital has been supplied on the ward service.

4. The delivery nursing service in the patient's home has been given by the Visiting Nurse Association. Most of these nurses have had special obstetrical training. During the past five years, 4,844 antepartum, 5,313 postpartum and 4,939 newborn visits were made by these departments. The cooperation and assistance given by these nursing divisions have aided greatly in the perfection of this service.

Having developed this unit from the nursing and medical standpoint, it was found necessary to rely on the Welfare Department for financial support and on the Social Service Department for protection. The relationship of this unit with these departments has been intricate. The Department of Welfare has financed the hospital as well as the home expenses of the truly indigent

patient. The Social Service Department, besides providing material for the clinics, has not allowed individuals to abuse this free service. The students, likewise, have had the advantages of the social service work. There has been a whole hearted cooperation of other branches of medicine, such as chest, heart, skin and syphilis clinics. Their consultation has aided in the care of the prenatal cases and has offered the students opportunities for additional observation. Advice in nutrition and diets has been given to the patients both in the clinics and the Mothers' Clubs by dietitians connected with the Health Department.

The students have received their prenatal, natal and postnatal instruction in this type of maternity unit. They have spent a total of twenty-two hours in these prenatal clinics in their senior year. All of the work has been done under supervision. Instruction has been given in history taking, obstetric examinations, prenatal care and various problems that confront those connected with such clinics. The students have been taught to regard an obstetric case as a general medical problem, and that prophylaxis and maintenance of health is as important as the condition itself. They have helped to decide which cases are safe to deliver in the home and which should be delivered in the hospital. Attempts have been made to assign cases to the students in these clinics for their home deliveries. This has allowed them to watch the prenatal stage as well as the labor and postpartum progress. When the students have attended a home delivery, they have worked in pairs, one giving the anesthetic and the other making the actual delivery. During the labor and delivery an instructor and nurse have been present. After delivery, the students have made calls and watched the postpartum progress.

Since the inception of the home delivery service, a total of 2,349 cases have been delivered by the students. These cases have all been supervised by an instructor from the College of Medicine. This work has not been delegated either to interns or to residents. There have been no maternal deaths; there have been no infections of any severity. In the past five years, there have been twenty-two stillborns; some have been premature and others macerated when born. The women delivered in the home have all been normal multiparae. All primiparas and multiparas with complications have been delivered in the hospital. Women presenting abnormal conditions during labor in the home have been sent to the hospital by the instructor. Students have observed the progress and the results obtained in these cases. Among 8,850 patients taken care of in the clinics, combining home and hospital deliveries, there have been twelve deaths. These all occurred in the hospital. Patients have made 57,556 visits to the clinics. From 21 to 23 per cent of these patients were seen before the third month; from 53 to 57 per cent were under control before the fifth month. Serological Wassermann examinations were made on 95 per cent of the patients. Positive Wassermann reactions were obtained in 3.6 per cent; 0.5 per cent were suspicious. All these women have been treated. With the setup of this maternity unit as arranged in Syracuse University the student has received an excellent practical experience. We feel that the combined didactic and hospital work has given us a well rounded out program.

In order to complete the picture of the obstetrics teaching in Syracuse, I would like to summarize briefly the remaining portion of the teaching program. Together with the instruction received by the students in the clinics and in the home, they have had the opportunity of doing hospital work. The senior year has included a ten day residency at Memorial Hospital, where, under supervision, labor is watched and deliveries observed. Students receive board and room during this time. They have scrubbed up on all ward cases. They have also received forty-eight hours of obstetric discussion and ward work in the hospital, together with twenty hours of phantom work. Here the dangers of operative obstetrics have been stressed. The junior year has included ninety hours of didactic work, together with observation of cases in the hospital. Postgraduate work has been given at Memorial Hospital for interns wishing to proceed further in this specialty.

CONCLUSIONS

1. We wish to emphasize the need of more clinical teaching in obstetrics.
2. The home is an ideal place to teach normal obstetrics, but trained supervision must be given.
3. The program should also include a hospital residency.

Study of Accomplishment of the 1937 Freshman Class in Seventy-seven Medical Colleges in the United States and Eight Medical Colleges in the Dominion of Canada

Tenth Study

FRED C. ZAPFFE
Secretary, Association of American Medical Colleges
Chicago, Illinois

A study of the accomplishment of students enrolled in the freshman class of the seventy-seven medical colleges in the United States and eight in Canada which participate in the study by furnishing the information on which it is based has been made since 1928, therefore, the data presented herewith constitute the tenth report. This study would not have been possible without the cooperation of the medical colleges, for which I express my deepest and most sincere appreciation. For some colleges, with a large student body, the labor entailed by the preparation of these reports is considerable, and inasmuch as their real worth cannot be appreciated except by those who have had opportunity to make use of the results accruing from these reports, the reason for making them is sometimes questioned. Complete knowledge on this point speedily leads to the conviction that this study is one of the most valuable of the many studies made by the Association of American Medical Colleges.

The reports are used, in the main, in two ways: First, the accomplishment of the freshman class is transmitted to the arts colleges whence these students came. In the "Arts Colleges" file, each year, approximately 600 cards are added to those collected since 1928. Each one of the 600 cards represents one arts college. On this card is entered the name of the student, his aptitude test record, if any, admission credits, name of medical college attended, class record and standing by thirds. A copy of this card is sent to the arts college with a request that it report on the standing of these students, by thirds, while in college. This information serves as the basis of a study which correlates the scholarship in college with the scholarship in the medical school, thus giving information which can be used to good advantage by the admission officers of the medical colleges. The colleges are very grateful for this information, which is not available elsewhere. Individual medical colleges report to the arts colleges whence their students came, but this report covers only one medical college. The Association's report covers all medical colleges, approved and nonapproved.

Second, every medical college receives a report which covers all 600 arts colleges, names of students and other information not pertinent being omitted. The report is merely intended to show how the students of these colleges fared in medical school during the first or freshman year. These reports should prove helpful in the selection of students on the basis of what the record of their college has been. If, year after year, many of their college mates have done badly in medical school, then, why accept any more from that source unless the applicant is possessed of a high degree of scholarship?

The reports on students in the sophomore, junior and senior years are added on the cards in the "Student Register," a scholastic register in which every student in each of the four years is represented by a card on which is shown his full name, address, arts college record, aptitude test rating, application record, name of medical college attended, year of attendance and class record, year by year, with class standing, and, finally, name of hospital in which internship was served—after which, the card is removed from the file. The Register has proven invaluable for supplying information on any student to hospitals, state examining and licensing boards, and whether an applicant is a repeater but forgot to make mention of that fact on his application blank. The preparation of the Register entails an enormous amount of work and time, but it is worth it. Here is the only source of information on medical students dealing solely with their scholastic record. It is based on the reports made by the medical colleges, hence should be correct.

COLLEGE DATA

The constitution and by-laws of the Association of American Medical Colleges provide that member colleges may accept applicants from arts colleges which have not been approved by any recognized standardizing agency, provided that notice of such acceptance is filed in the office of the Association. Of the 1937 freshman class, 261 students (4.5%) came from nonapproved colleges, as against 200 (3.3%) in 1936; 241 (3.8%) in 1935 and 298 (4.5%) in 1934. The number of colleges represented by this group was 114 (18.5%) in 1935; 88 (14.9%) in 1936, 108 (18.8%) in 1937.

The total number of colleges represented by the freshman student body in 1937 was 572—approved 464; nonapproved, 108. In 1936, it was considerably smaller than in 1935, 587 as against 615, of which 501 and 499, respectively, were colleges approved by state or national, or both evaluating agencies. Whether this drop has any significance, cannot be stated. Each year, about two thirds of the colleges are represented by three or more students; the remaining third group is a fluctuating one, sometimes represented and sometimes not; usually not sending more than one student to a medical school.

ACCOMPLISHMENT OF 1937 FRESHMAN CLASS

The total number of students reported on by all medical colleges at the end of the academic year 1937-1938 was 5,994, 78 fewer than for 1936-1937. There has been a steady reduction since 1934-1935 when 6,683 freshmen were reported, the largest number for the ten years during which this study has been made and for many years prior. It is interesting to note that 12,128 students applied for admission to the 1937 class; 7,543, or 62.1 per cent, were accepted; 5,823, or 77.2 per cent, were reported as having enrolled at the beginning of the session. From this number must be deducted a small number of students who withdrew within the first few days or week of the session and were not reported in the finals, and 198 repeaters must be added for many of whom no enrollment blanks were filed because this was not their first enrollment.

The accomplishment of these 5,994 students was as follows: clear, 75.4 per cent; encumbered (subject conditions or failures or both), 12.7 per cent; must

repeat, failed, dropped, withdrew because of poor or failing scholarship, 8.9 per cent; withdrew on account of illness, lack of sufficient finances or reason not given, 2.9 per cent. This gives a percentage of 11.8 of all freshmen who were not promoted to the sophomore year, assuming that all those with subject conditions or failures succeeded in removing them and subsequently entered the sophomore year.

These results are a distinct improvement over those of the 1936 class with 71.9 per cent clear; 14.9 per cent encumbered; 10.0 per cent failed and 3.2 per cent withdrew. If the preparation for medicine of the 1937 class is compared with that of the 1936 class, one may infer that more time spent in college might have affected the accomplishment of the students because far fewer students had less than three years of preparation and more had a bachelor's degree in the 1937 class than in the 1936 class. It is unlikely that teachers were less severe in passing on the student's work than in previous years. Then, too, the type of preparation, influenced by what has been said and written as to the preferred kind of preparation, may have given the 1937 class a better background for medicine. It is also possible that the students have become more conscious of the need for working harder because of the difficulty encountered by repeaters in gaining admission anywhere. Anyway, whatever the reason for the lowered mortality and morbidity, it is very apparent that both these items have been lowered. The 1936 class had a slight edge on the 1935 class although not nearly so marked as in the case of the 1937 class. Without a doubt, medical colleges are accepting students who are better prepared to study medicine and students are doing better work.

When the class is broken down into two groups—one, the group consisting of students who elected to study medicine in the medical school of the university in which they made preparation; the other, the group of students who came from other universities and colleges, there is noted quite a contrast in the accomplishment of both groups. (Table 1.) These two groups will be designated as "own" and "others" in the further discussion.

There were 2,325 "own" students, 39 per cent of the total and 3,669, or 61.0 per cent, "others." The possibility of making a good selection from "own" students because of the availability of complete records, opportunity to consult the college teachers, personal interviews, etc., is reflected in the accomplishment of this group as compared with that of the "others" group. Naturally, the medical school will choose only the best of its own university students. The others must, perforce, seek admission elsewhere. Thus, we find on comparison of results that more of the "own" students had a clear record, fewer had encumbrances, considerably fewer failed completely and fewer withdrew. For both groups, the results for 1937 are considerably better than they were for 1936, with one exception. Of the "own" group, 7.1 per cent failed completely in 1936 as against 7.5 per cent in 1937. The "others" group improved in all brackets, more so than the "own" group. The reason can only be ascribed to better preparation. Without a doubt, students are preparing themselves better and, therefore, they

are better medical students. That assumption alone can account for what is happening so far as scholarship is concerned.

COMPARISON OF ACCOMPLISHMENT WITH PREPARATION

A study of the degree of preparation of these students discloses some extremely interesting facts. First, there is an increasing tendency for prospective medical students to remain in college longer. Whether this should be ascribed to a desire for better preparation or to a belief that it will help to secure admission to a medical school is a question to be considered. But when the better accomplishment is taken into consideration, one is almost forced to believe that students remain in college longer to be better prepared for the study of medicine.

TABLE 1. ACCOMPLISHMENT OF 1937 FRESHMAN CLASS.

	Own		Others		All Students	
	No.	%	No.	%	No.	%
Clear	1835	79.4	2644	72.8	4479	75.4
Encumbered	251	10.8	504	13.4	755	12.8
Out	172	7.5	360	10.5	532	8.9
Withdrew	51	2.3	123	3.4	174	2.9

Of the 1937 class, only 6.55 per cent had less than three years of college work. Only a very small number of these offered the minimum of two years of college work on application for admission. The remainder had two and one-half years; some a trifle more but not three full years. The number of students holding a bachelor's degree or better was larger than in previous years, 55.75 per cent. Each year those with lesser preparation have diminished in number, whereas the degree holding group has steadily increased in numbers. The group with three years of preparation, or more, but less than four years has remained fairly constant. In 1937, the percentage was 32.3. The four or more years group, not possessing a degree has also remained constant; 5.4 per cent in 1937.

TABLE 2. PREPARATION OF STUDENTS FOR STUDY OF MEDICINE

	Own		Others		Total			
Preparation	No.	%	No.	%	No.	%		
2-3 Years	206	8.9	176	4.8	382	6.5		
3-4 Years	1145	49.2	791	21.2	1936	32.3	2652	44.2
4 Years	161	6.9	173	4.7	334	5.4		
A.B.	517	22.2	1412	38.7	1929	32.2	3342	55.8
B.S.	296	12.7	1117	30.6	1413	23.6		

Table 2 throws some interesting side lights on this problem, and also on the selection of students in that it shows that admitting officers are willing to take a chance with students of their own university who do not have as much preparation, so far as time is concerned, but they select from the "others" group, in the main, only those students who have had more preparation, preferably those who have a bachelor's degree. In the "own" group, 8.9 per cent had less than three years of preparation as against 4.8 per cent of "others." Only 34.9 per cent of "own" students held a degree, as against 69.3 per cent of "others." In the "own" group, 49.2 per cent had three years of preparation as against 21.2 per cent of "others." And of those with four or more years of preparation, 6.9 per cent were "own" and 4.7 per cent were "others."

Interesting also is the fact that each year more and more students offer more than one degree. In 1937, 134 students held two or more degrees. There were 27 Ph.Ds., far more than in any previous class; 39 with A.B., A.M.; 29 with B.S., M.S.; 22 with A.B., M.S.; 12 with B.S., A.M.; 6 with A.B., B.S.; 1 each, B.S., D.Sc., B.S., L.L.B.; B.S.E., A.B., L.L.B., and, there was one man with an M.S.P.H. Four men held engineering degrees. Thus, 2.22 per cent held more than one degree.

TABLE 3. CORRELATION OF ACCOMPLISHMENT WITH PREPARATION FOR STUDY OF MEDICINE

	Clear		Encumbered		Out		Withdrew		
Preparation	No.	%	No.	%	No.	%	No.	%	Total
2-3 Years	292	76.4	51	13.4	31	8.1	8	2.1	382
3-4 Years	1491	77.2	219	11.3	170	8.8	51	2.6	1931
4 Years	239	71.8	47	14.1	32	9.6	15	4.5	333
A.B.	1433	75.7	247	13.1	157	8.2	56	3.0	1893
B.S.	1025	73.1	191	13.6	141	10.0	44	3.2	1401

Table 3 presents the accomplishment of the 1937 class on the basis of preparation for the study of medicine. The largest number of clear records was made by the three years group, 77.2 per cent; second was the less than three years group, 76.4 per cent; third, the A.B. group with 75.7 per cent; fourth, the B.S. group with 73.1 per cent and fifth, the four or more years group with 71.8 per cent.

This picture is changed somewhat in the group of students who had encumbrances. Here we find that the four or more years group had the largest representation, 14.1 per cent, and the three years group the smallest, 11.3 per cent. The less than three years group had fewer encumbrances than the B.S. group, 13.4 per cent as against 13.6 per cent. The A.B. group had 13.1 per cent; in other words, it was in second place.

The group of failed or dropped students also shows some interesting variations. The B.S. group had the largest percentage of failures, 10.0; the less than

TABLE 4. CORRELATION OF ACCOMPLISHMENT AND PREPARATION OF "OWN" AND "OTHER" STUDENTS

	Own								Others							
	Clear		Encumbered		Out		Withdrew		Clear		Encumbered		Out		Withdrew	
Preparation	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2-3 Yrs.	174	84.4	14	6.8	12	5.8	6	3.0	118	67.0	37	21.0	19	10.8	2	1.1
3-4 Yrs.	920	80.7	105	9.2	86	7.6	29	2.5	571	72.2	114	14.4	84	10.6	22	2.8
4 Yrs.	120	74.5	21	13.0	16	9.9	4	2.4	119	69.1	26	15.1	16	9.3	11	6.4
A.B.	399	78.5	63	12.4	38	7.5	8	1.6	1034	74.6	184	13.2	119	8.6	48	3.5
B.S.	223	75.8	48	16.3	19	6.5	4	1.3	802	72.4	143	12.9	122	11.0	40	3.6

three years group, the smallest, 8.1. The A.B. Group was second with 8.2 per cent; the three years group third with 8.8 per cent and the four or more years group fourth with 9.6 per cent. The largest number of withdrawals was in the four or more years group, 4.5 per cent. Again, the less than three years group topped the other groups by having the fewest withdrawals, 2.1 per cent. The three years group had 2.6 per cent; the A.B. group, 3.0 per cent and the B.S. group, 3.2 per cent.

Table 4 shows the "own" and "others" groups as to preparation and ac-

complishment. The two groups which merit special comment are the less than three years group and the four or more years group. The former make a fine showing on all counts; the latter, a very poor showing. It is apparent that students with the lesser preparation are chosen with more than the usual care exercised in selection. They are what may be termed a "hand picked" group. Their selection is fully justified by their accomplishment. Less chance is taken by accepting students in this group than in any other group, on the basis of careful selection. Many of these students attend the medical school of their own university; therefore, as stated previously, it is possible to have full knowledge of their scholastic standing and their aptitude for the study of medicine. Furthermore, they can be subjected to a personal interview. It would be interesting to know what would happen if all students were selected from this group, if the same methods of selection could be used as are now used for this special group. Then, too, it must be remembered that there are colleges whose students, year after year, make a good record in medical school despite the fact that they have had only two years of college work.

The four or more years group is definitely a hazard. Although some members of this group have attended college for as many as eight, even nine, years, they do not seem to have the right preparation, aptitude or attitude for the study of medicine. Perhaps, one should regard too many years in college as an indication of unfitness for the study of medicine. True, the group is not large, 333 in 1937, but it is only a trifle smaller than the less than three years group, 382 in 1937. They make the poorest showing on all counts of any group. To exclude them might work hardship on a few students but it would reduce the number of students as a whole and the morbidity and mortality as well. It is a point worth considering.

TABLE 5. COMPARISON OF ACCOMPLISHMENT OF WOMEN AND MEN STUDENTS

	Women		Men	
	No.	%	No.	%
Clear	250	73.9	4229	75.5
Encumbered	44	13.0	711	12.7
Out	33	9.8	499	8.9
Withdrew	11	3.3	164	2.9
Totals	338		5603	

ACCOMPLISHMENT OF WOMEN STUDENTS

Table 5 shows the accomplishment of the women students who numbered 341 in the 1937 class, as compared with the results for the men students. It is evident that the women do not do as well as the men. They had fewer clear records; more encumbered records; more failures and more withdrawals, despite more preparation.

Table 6 presents a correlation of accomplishment with preparation for the study of medicine. The women have remained in college longer than the men. More women held bachelor's degrees than did men, 70 per cent as against 55.75 per cent. And only 5.9 per cent had less than three years of college work; 20.8 per cent had three years and 2.8 per cent had four or more years of work but no degree. Many of the women took the arts course, 51.0 per cent; 19.0 per cent took the science course for the degree.

The less than three years group came through in far worse shape than did the men. Only 50 per cent made a clear record; 25 per cent had encumbrances; 15.0 per cent failed and 10.0 per cent withdrew. Can it be argued that women need more preparation for the study of medicine than do the men? This is merely a question; not a suggestion. The three years group made the best record, except for the four or more years group, in getting clear records, 77.0 per cent as against 90 per cent. But 10.0 per cent of the four or more years group failed as against 7 per cent of the three years group. The A.B. group stood third in the percentage of clear records, 75.7; the B.S. group fourth,

TABLE 6. CORRELATION OF PREPARATION AND ACCOMPLISHMENT OF WOMEN STUDENTS

	Clear		Encumbered		Out		Withdrew		Total	
Preparation	No.	%	No.	%	No.	%	No.	%	No.	%
2-3 Yrs.	10	50.0	5	25.0	3	15.0	2	10.0	20	5.9
3-4 Yrs.	55	77.0	9	12.7	5	7.0	2	3.0	71	20.8
4 Yrs.	9	90.0			1	10.0			10	2.8
A.B.	131	75.7	20	11.4	18	10.3	5	2.8	174	51.0
B.S.	48	72.7	10	15.1	6	9.1	2	3.0	66	19.0

72.7 and, as stated above, the less than three years group fifth, with 50.0. This group also lead in the largest percentage of encumbrances, 25.0; the B.S. group was second with 15.1; the three years group third, with 12.7 and the A.B. group had the least, 11.4.

As to failures, the three years group had the fewest, 7.0 per cent; the B.S. group was second, with 9.1 per cent; third, the more than four years group, with 10.0 per cent; fourth, the A.B. group, with 10.3 per cent; and fifth, the less than three years group with 15.0 per cent. This latter group also had the largest number of withdrawals, 10.0 per cent; second came the three years group, with 3.0 per cent—tied by the B.S. group, and last, the A.B. group with 2.8 per cent. Every one may place his own interpretation on these figures, but they show definitely that the less than three years group is a very poor risk and that the B.S. group, among the men as well as among the women, does not show up as well as the other groups. Looking backward, it is quite evident that students are beginning to appreciate that it is wiser to take the courses of study which lead to the bachelor of arts degree than those which lead to the bachelor of science degree. The cultural courses of the long ago are coming into their own again. The intending medical student must know more and more of more and more rather than less and less of courses which are strictly cultural and humanistic.

The total number of women students in all four years in 1937-1938 was 1,109 as against 20,558 men students, or 5.4 per cent. In the 1936 freshman class there were 320 women, 21 less than in 1937. Of these 320 women, 286 were reported on at the end of the sophomore year, a percentage of 89.4. By classes, in 1937, there were the following women students: Freshmen, 341; sophomore, 286; junior, 245; senior, 237. At the end of the year, 1937-1938, 253 women received the degree of M.D. Included in this total are women who completed their college work in June, 1937, but were not eligible for the degree of M.D. until after the completion of a one year internship.

ACCOMPLISHMENT OF STUDENTS FROM NONAPPROVED COLLEGES

In table 7, the accomplishment of students from nonapproved colleges is presented. These data show clearly that these students do not carry on as well as do the students of the approved colleges. Why this is so, is difficult to say. It may be said that acceptance of such students by medical schools is based, in the main, on their record in the college, correlated, or not, with the percentile reached in the medical aptitude test if the student took this test. True, nonapproval of a college may be based on one or more of many factors considered for accreditation by the accrediting agency. Nevertheless, it is significant—as may be seen by comparing this table with the table showing the accomplishment of all students—that the students coming from these nonapproved colleges trail the others considerably.

TABLE 7. PREPARATION AND ACCOMPLISHMENT OF STUDENTS FROM NONAPPROVED COLLEGES

	Clear		Encumbered		Out		Withdrew		Total	
Preparation	No.	%	No.	%	No.	%	No.	%	No.	%
2-3 Yrs.	20	64.5	9	29.0	2	6.5	0	0	31	11.5
	*R 3	60.0	R 1	20.0	R 1	20.0				
3-4 Yrs.	48	61.5	12	15.4	14	17.9	4	5.1	78	30.0
	R 1	16.6	R 1	16.6	R 4	66.4				
4 Yrs.	4	57.1	1	14.3	1	14.3	1	14.3	7	2.7
A.B.	39	65.0	9	15.0	11	18.3	1	1.6	60	23.0
	R 4	80.0			R 1	20.0				
B.S.	49	58.3	12	14.3	18	21.4	5	6.0	85	32.2
	R 5	83.3			R 1	16.6				
Totals	160	61.5	43	16.6	46	17.8	11	4.0	261	

*Repeaters

The 108 nonapproved colleges were represented in the 1937-1938 freshman class by 261 students, nearly 25 per cent more such colleges than in 1936 and about 27 per cent more students than in 1936. The Association of American Medical Colleges permits the acceptance of students from colleges not approved by a national or regional accrediting agency if the students from that college are admitted to the university of the state in which the college is located. Notice of such acceptance is required and is given when the enrollment blank is submitted.

Of these 261 students, 160, or 61.5 per cent, had a clear record for the year; 43, or 16.6 per cent, had subject conditions or failures or both; 46, or 17.8 per cent, failed outright or were dropped; 11, or 4 per cent, withdrew for various reasons—illness, lack of sufficient finances or an unknown reason but probably having to do with dissatisfaction with their work, not in the right field, etc. It is interesting to note that 22, or 8.4 per cent, of these 261 students were repeaters; that only 13, or 59.1 per cent, came through clear; 2, or 9.1 per cent with encumbrances (subject conditions or failures or both) and that 7, or 31.8 per cent failed or were dropped. Thus, this group of repeater constitutes rather a poor risk. In view of the fact that these 261 students must have convinced admitting officers of their ability to carry on, selections of students from nonapproved colleges usually being made with more than ordinary care, it seems that the group as a whole is a definite risk and is a decisive factor in the mortality of the freshman class.

Looking over the list of the colleges (108) represented by this group of students, we find that 50 of them, or 46.3 per cent, contributed only "clear record" students; 22, or 20.3 per cent, encumbered record students, and 36, or 33.3 per cent, had failed or dropped students. Many of these colleges were represented by only one student, 10 students being the largest number.

Table 7 also presents the data on the preparation of these 261 students for the study of medicine. The total number is rather small, nevertheless the figures and percentages shown are based on the entire group, hence give very definite in formation on how these students carried on. Even this group shows that the A.B. students have the largest number of clear records of any group, 65.0 per cent. The students with less than three years of preparation come second with 64.5 per cent; the three to four group, third with 61.5 per cent; fourth, the B.S. group, with 58.3 per cent and fifth the four or more years group, with 57.1 per cent.

A different picture is shown by the column headed "encumbered records" (subject conditions and failures or both). The less than three years group heads the list with 29.0 per cent encumbered records; second is the three years group with 15.4 per cent; then the A.B. group, with 15.0 per cent, and, a tie for fourth place, the more than four years group and the B.S. students with 14.3 per cent. The explanation for these figures is not readily apparent.

The column headed "out," (Failed or dropped), shows another swing in rotation of these groups. Here the B.S. students lead with 21.4 per cent; second are the A.B. students, with 18.3 per cent; third, the three years group, with 17.9 per cent; fourth, the four or more years group, with 14.3 per cent, and fifth, the less than three years group with an astonishingly low percentage of 6.5.

The fourth column, headed "withdrew" includes withdrawals for reasons other than failing or poor scholarship, such as illness, lack of sufficient finances, did not like medicine, wanted to return to college for further work, etc., etc. None of the less than three years group withdrew; only 1.6 per cent of the A.B. group withdrew; 5.1 per cent of the three years group; 6.0 per cent of the B.S. group and 14.3 per cent of the four or more years group.

In the final column, headed "totals," it may be noted that the B.S. students lead, contrary to what is true of the entire freshman class; second is the three years group; third, the A.B. group; fourth, the less than three years group; fifth, the four or more years group. The letter "R" and figures following it in this table indicate repeaters.

Generalizing, one can say that selections of students from nonapproved colleges should be made with extreme care and only after taking every available criterion for judgment into consideration. To exclude this group, would exclude some very desirable students, as is always the case when only a single criterion for acceptance is considered. Therefore, it should be emphasized that intelligence tests, aptitude tests and scholarship — possibly a personal interview — should all be considered for accepting these students.

ACCOMPLISHMENT OF REPEATERS

Some medical colleges will not allow any student to repeat; others do. Opinion on this point is very much divided. It is possible that a student will fail not because he is not a good student but because he has been disturbed or harassed by some worry; or he may have fallen in with bad influences but is worth saving. At any rate, every year there is a considerable number of repeaters. In the 1937 class, there were 198 repeaters, 3.6 per cent of the total number of freshmen. In 1936, there were 203 repeaters. These figures do not include those repeaters who entered fraudulently and were dismissed when the fraud was discovered, usually by this office.

Thirty-five of these repeaters failed again and 10 withdrew, a total of 22.8 per cent. About one-third, 62.6 per cent of them got a clear record, although 52 of the 124 repeaters in this bracket were in the lower third of the class; 38 were in the upper third and 34 in the middle third. Therefore, in reality, only 72 of the 198 repeaters justified their acceptance. Twenty-nine repeaters, 14.6 per cent, had subject conditions and failures. Perhaps more careful discrimination in determining who shall be allowed to repeat would improve these figures. Inasmuch as many of the repeaters did not repeat in the school in which they made the original failure, it is not possible to predict what they might have done if they had repeated where they failed. On the other hand, repeating in another school, being a change of environment, may have been responsible for making an acceptable record on second trial. Such cases have been known. A school may advise a failed student to repeat elsewhere for that very reason.

TABLE 8. ACCOMPLISHMENT AND PREPARATION OF REPEATERS

	Clear		Encumbered		Out		Withdrew		Total	
Preparation	No.	%	No.	%	No.	%	No.	%	No.	%
2-3 Yrs.	14	53.8	6	23.0	6	23.0	0	0	26	13.1
3-4 Yrs.	33	61.1	5	9.3	13	24.0	3	5.6	54	27.2
4 Yrs.	13	65.0	5	25.0	2	10.0	0	0	20	10.1
A.B.	35	71.4	8	16.3	4	8.1	2	4.1	49	24.7
B.S.	29	59.2	5	10.2	12	24.5	3	6.1	49	24.7
Totals*	124	62.6	29	14.6	35	17.8	10	5.0	198	

*Upper, 38; Middle, 34; Lower, 52

Table 8 presents some very interesting data on the relation of previous preparation for the study of medicine to the accomplishment in medical school of these repeaters. The best record was made by the A.B. students, of whom there were 49, or 24.7 per cent of the total number, 198. Of these, 71.4 per cent made a clear record; next came those with four or more years of preparation with 65.0 per cent clear (this does not follow the rule for this group); the three year men were third, with 61.1 per cent; the B.S. men fourth, with 59.2 per cent, and the less than three years group, numbering 26, 13.1 per cent of the total number, with 53.8 per cent clear. In the encumbered group, the four or more year men stood highest, with 25.0 per cent; the less than three years group second, with 23.0 per cent; third, the A.B. group, with 16.3 per cent; the B.S. group fourth, with 10.2 per cent and the three year group fifth with 9.3 per cent. In the failed or dropped group, the B.S. men were highest, with 24.5 per cent of failures; next came the three year group, with 24.0 per cent;

then the less than three years group, with 23.0 per cent; then the four or more years group with 10.0 per cent, and with the lowest percentage of failures, the A.B. group—8.1 per cent. None of the less than three years group and the four or more years group withdrew. Withdrawals for the remaining three groups were: B.S., group 6.1 per cent; three years group, 5.6 per cent and A.B. group, 4.1 per cent. Taking the repeating group as a whole, the A.B. men made the best record; the less than three years group made the worst record, which does not conform to the record of the entire class so far as the last named group is concerned.

CORRELATION OF APTITUDE TEST WITH ACCOMPLISHMENT

Of the 1937 class, 79.2 per cent took the medical aptitude test according to check made in this office. It is very probable that this percentage is, in reality, larger because some students attended more than one college, although the student's name was looked for under the head of every college listed by him on his enrollment blank. Some students took the test elsewhere than in college. Doubtless, more than 80 per cent of the class took the test. Table 9 presents the accomplishment of the 79.2 per cent of the class for which we found the test record.

Table 9 shows the results by deciles. It confirms the claims made for this test. Those in the lower deciles did not do as well as those in the higher deciles. This is also true of class standing. The number of students who stood in the upper third of the class increased from the tenth to the first decile, although this is not quite so true with the middle and lower thirds. Of the total number of testees, 56.4 per cent were in the first to the fifth decile inclusive.

On the basis of accomplishment, 78.2 per cent made a clear record; 11.2 per cent had an encumbered record; 8.2 per cent failed or were dropped and 2.4 per cent withdrew, which is slightly better than the record made by the class as a whole, although no comparison should be made of these figures. It is significant, however, that of those who had encumbered records, 42.3 per cent had deciles from 50 upward, and of those who failed, 33.8 per cent had deciles from 50 upward. On the basis of the test results, testees with deciles over 50 are a much better choice than those with deciles under 50. The results are what one would expect. They emphasize the worth of the test in selecting students. The test alone should not be the basis of selection but the test and the scholarship record in college together should prove a splendid aid in selection.

Each year more and more students who are thinking of entering medical school take this test. In 1937, the number was nearly 12,000. Even if a student does not intend to study medicine, the test is a fine thing for him to take because it helps to show him where he is weak and where he is strong so far as knowledge and aptitude are concerned. Arts college teachers have pronounced the test as a good one for their students. Many of those who take it do better work afterward. Perhaps, too, the test helps to bring about a change of mind by convincing a student that he should not study medicine. In either case it is worth while. As an aid in selection of students by the medical colleges it has a definite place as has every other intelligence or aptitude test.

DATA ON SOPHOMORES, JUNIORS AND SENIORS FOR THE YEAR 1937

Table 10 presents the accomplishment of the three upper classes—sophomore, junior and senior. A notable improvement in scholarship is quite apparent, especially in the senior year, as is to be expected. But in each class there are failures and withdrawals. With the years, the number of failures is growing smaller, probably because of the better preparation of students for the study of medicine and, too, improved methods of selection for admission to the freshman year.

TABLE 9. CORRELATION OF ACCOMPLISHMENT WITH APTITUDE TEST RATING

Aptitude Test Percentile	Clear			Encumb.	Out	Withdrew	Total
	Upper	Middle	Lower				
1-10	36	80	51	69	53	22	311
11-20	69	111	74	65	51	13	383
21-30	83	154	55	64	53	12	431
31-40	88	154	99	56	53	12	462
41-50	130	142	89	49	44	11	465
51-60	140	166	104	57	35	14	516
61-70	163	181	88	50	34	11	527
71-80	198	177	79	42	25	8	529
81-90	208	189	68	49	25	5	544
90+	259	167	71	24	11	7	539
Total	1374	1521	788	525	384	115	

The number of clear records in the sophomore and junior years is somewhat better than in the freshman year. There is a definite improvement in this respect in the senior year, which is also true of encumbered records and failures. Of course, some students will fail in the senior year, but a percentage of 0.5 is by no means alarming. It was 1.3 per cent in the 1936-1937 class. In fact, it is a very small figure when one thinks of the senior class as numbering 5,310. It is astonishing that there should be withdrawals among the seniors, but illness accounts for nearly all of them; lack of sufficient money to finish for the remainder. There are not among the seniors any withdrawals on account of failing scholarship.

TABLE 10. ACCOMPLISHMENT OF SOPHOMORES, JUNIORS AND SENIORS: CLASSES OF 1937-1938

Class	Total	Clear		Encumbered		Out		Withdrew	
		No.	%	No.	%	No.	%	No.	%
Sophomore	5449	4399	80.7	792	14.6	186	3.4	72	1.3
Junior	5154*	4247	82.9	744	14.8	72	1.5	31	0.6
Senior	5310	5187	97.5	80	1.5	23	0.5	22	0.5

*50 Yale students records not ready but included in total No. Students.

Table 11 presents the data on the number of matriculants who continue their studies for four years. It must be stressed that the members of these various classes did not all begin the study of medicine at the same time. The records in the Student Register show that some students persist for as many as ten years before they finish the course and graduate. Therefore, the figures shown in this table represent only the number of students in each class, regardless of time of matriculation, and the number of students in a class which is the next step up to graduation. The sophomores of 1937 were not all of them freshmen in 1936; nor were the juniors all sophomores the previous year, nor the seniors all juniors the previous year. But as this variable is present each

year, the figures shown give a fairly accurate idea as to what the percentage of decline in numbers of students is for each year and the number of graduates may be forecast fairly accurately. True, the seniors do not all graduate. Some of them will not graduate for another year, after the completion of the internship. Thirteen colleges have the internship requirement for graduation. Therefore, the figures on numbers of seniors and numbers of graduates for any one year will not agree, although both figures are above 5,000, which is said to be too large so far as graduates are concerned. The present influx of foreign medical graduates, especially from the middle European countries, will add considerably to the number of physicians which must be absorbed. It has been said that this influx during 1937 is greater than 10 per cent of our own graduates for 1937.

DATA FOR CANADA

The curricula of some of the Canadian medical schools include some of the preparatory work in college, therefore, there are five and six year courses as well as four year courses. By keeping this in mind, the following figures emerge as comparable with those for the medical schools in the United States. Only eight of the ten medical schools of Canada cooperated in this study, hence the figures are not totals. These eight medical schools had a total of 1,807 medical students. Of that number there were 473 freshmen; 468 sophomores; 441 juniors and 425 seniors. In addition, there were 189 first year and 316 second year students; i.e., students who definitely enrolled for medicine but who were also carrying college work ordinarily included in the preparatory college work taken by these students in the United States. There were 82 women in the last four years—or the medical years of the United States schools, and 29 in the first two years, the mixed years.

TABLE 11. DATA ON NUMBER OF MATRICULANTS WHO CONTINUE THEIR STUDIES

Year	Freshmen	Sophomores		Juniors		Seniors	
1932	6457	5586	86.5	5511	85.3	5199	80.5
1933	6650	5887	88.5	5471	82.2	5215	78.4
1934	6683	5592	83.7	5432	81.1	5310	79.4
1935	6352	5493	86.4	5154	81.1		
1936	6072	5449	89.7				
1937	5994						

Total Number Students in all Medical Schools 1937-1938: 21,907.

Table 11 presents the accomplishment of the class which corresponds with the freshman class of the United States medical schools. In clear records these students did not do as well as did our students, but in failures they did considerably better, that is, they had fewer failures. The difference is made up in the encumbered records of which there were quite a few, 21.7 per cent. Are the Canadian teachers stricter than our own? Do they fare better in their selection of students? The second question may, perhaps, be answered by referring to the record made by the first year students in the six years course. Of 189 students in that group, 37.0 per cent failed; only 49.7 per cent had a clear record. That year seems to be a sorting year during which the poor students are eliminated to a considerable degree. In the second year, the showing is

better than in the first year. Of the 316 students in this year, 72.5 per cent came through clear and only 13.0 per cent failed. These students are under the direct supervision of the medical faculty which must be quite a factor in the process of elimination.

TABLE 12. ACCOMPLISHMENT OF FRESHMEN IN EIGHT MEDICAL SCHOOLS OF CANADA

Total	Clear		Encumbered		Out		Withdrew	
	No.	%	No.	%	No.	%	No.	%
473	332	70.2	103	21.7	36	7.6	2	0.5

Table 12 presents the accomplishment of the sophomores, juniors and seniors. It is about on a par with the results in the classes in the medical schools of the United States. The study of the students in Canadian schools has not been made sufficiently long to make it possible to give data on how many of the entering students go on to graduation, but apparently, from data at hand, the number is about the same as in the United States.

In proportion to population, Canada has at least as many, if not more, medical students than we have. The number of students in Laval and the University of Montreal was not reported, but, undoubtedly the number is large, probably approximately 400 or 500. Adding that number to the number of reported students, Canada last year had about 2,200 or more medical students as against 21,667 in the United States with a population about thirteen times larger than that of Canada.

TABLE 13. ACCOMPLISHMENT OF SOPHOMORES, JUNIORS AND SENIORS OF EIGHT MEDICAL SCHOOLS IN CANADA

	Total	Clear		Encumbered		Out		Withdrew	
		No.	%	No.	%	No.	%	No.	%
Sophomores 471 Freshmen in 1937	468	378	80.8	78	16.6	8	1.7	4	0.9
Juniors 467 Sophomores in 1937	441	366	83.0	70	15.8	4	0.9	1	0.3
Seniors 449 Juniors in 1937	425	392	92.2	26	6.1	7	1.6		

The ten Canadian schools graduated 572 students, about 11.0 per cent as many as our own medical schools graduated. It is a fact that some of these graduates will decide to practice in the United States. Many of that group are citizens of the United States who for some reason or other studied medicine in a Canadian medical school. McGill has always had quite a number of students from the States. Dalhousie, in the past but not now, accepted quite a few of our students. For several years Dalhousie has limited itself to accepting students from the Maritime Provinces, in the main; a few from other provinces of Canada; none from the United States. Most of the Canadian schools do not accept any students from the States. Some accept one or two students occasionally for special reasons.

I am very grateful to all those who have given so freely of their time and effort in making this study possible.

Objectives in Teaching of Anatomy

LEO P. CLEMENTS

Department of Anatomy, Creighton University School of Medicine
Omaha, Nebraska

In the broad field of anatomy, usually classified as gross anatomy, embryology, histology and neuroanatomy, involving hundreds of pages of subject matter to which medical students are subjected, it is obvious that wide and varied choices are open to instructors as to what and how much shall be taught. Among the determining factors in these choices, custom is a strong one in gross anatomy and, to some extent, in the other fields. The personal whim of the instructor is no small item. Board examinations are, perhaps, considered by some, but no experienced anatomist prepares his students solely for board examinations. Nevertheless, whatever the feeling of instructors toward examining boards, every medical student must learn to juggle enough details in anatomy to pass this inevitable hurdle. So to this extent such boards set up objectives, which, like taxes, cannot well be evaded. Also, it is pertinent to ask what examiners expect of students in anatomy.

The following survey is meant merely to indicate trends or tendencies, and certainly is not a comprehensive set of teaching criteria. Any experienced anatomist might have guessed the results, but, at least, the survey is objective. Questions from ten examining boards, covering periods of from one to six years, were secured, as follows:

ANATOMY QUESTIONS TABULATED

	Date	No. Examinations	No. Questions
California Board	1932-1938	11	132
Connecticut Board	1936-1938	5	50
Colorado Board	1936-1938	9	90
District of Columbia Board	1933-1938	9	52
Illinois Board	1935-1937	9	90
Iowa Board	1935-1938	5	33
Minnesota Board	1933-1938	23	184
National Board	1933-1937	20	122
Nebraska Board	1933-1938	17	130
New York Board	1937	3	30
	Totals	111	913

It may be objected that the greater number of questions and time covered from some boards would tend to make the results lopsided. Granting this, I believe that the survey is still a fairly good cross section of examining boards in general.

As anatomy is largely a descriptive and informative subject, it is not surprising to find the types of questions distributed as follows:

TYPES OF QUESTIONS ASKED

1.	Requests for description or definition	414,	41.5%
2.	Requests for direct information, lists, outlines	369,	36.9%
3.	Requests for discussion	73,	7.2%
4.	Requests for explanation, relations	64,	6.3%
5.	Requests for diagrams, demonstrations	59,	5.8%
6.	Requests for comparison	26,	2.5%

The tabulations from the questions were made on basis of references made to anatomic structures, which, in turn, were classified under fifteen heads. The total number of references thus exceeds the number of questions surveyed. It is interesting to note the high places that histology and embryology hold in the list. Any classification is arbitrary and overlaps. Of the possible groupings the following seems fairly simple and logical.

COMPARATIVE NUMBER OF REFERENCES TO THE CLASSES OF ANATOMIC STRUCTURES

	No. References
Organs and Systems (general)	244
Histology	183
Nerves: distribution—supply	174
Muscles: origin; insertion; relations	141
Blood Supply to Structures	102
Embryology	101
Articulations and Ligaments	87
Glands: Exocrine	69
Blood Vessels: distribution	57
Fascia and Sheaths	55
Bones	48
Lymphatics	33
Central Nervous System: gross; relations	30
Glands: Endocrine	27
Cross Sections	14
Total	1,365

Under each of the above headings the structures are listed below in the order of frequency to which they were referred, with the number of references following the name of the structure. To some structures listed, only one or two references were made in all the 913 questions tabulated. These are included as a sample of the vast detail possible of mention. All references are to gross structure or relations except in the headings embryology and histology. The tabulation is as follows:

ORGANS AND SYSTEMS

Small Intestine 25	Eye 10	Ovaries 5
Heart 22	Stomach 9	Spleen 4
Liver, Gall bladder 20	Pelvic Cavity 8	His-Purkinje 4
Large Intestine 14	Genito-urinary, general 8	Petits Triangle 2
Ear 14	Lung 7	Thoracic Cavity 2
Uterus, Tubes 12	Larynx 6	Cervical Triangle 2
Respiratory tubes 12	Femoral ring 5	Pericardium 2
Bladder, Ureter 12	Popliteal Space 5	Occipital Triangle 1
Mediastinum 11	Ischiorectal fossa 5	Subclavian Triangle 1
Femoral Triangle 10	Esophagus 5	Hunter's canal 1

HISTOLOGY

Small Intestine	20	Bladder, Urethra	7	Thymus	3
Kidney	14	Bone	6	Central Nervous system	3
Ovary	12	Spleen	5	Testis, vas	2
Muscle	11	Uterus	5	Tonsil	2
Colon	10	Blood	5	Lymph Node	2
Pancreas	10	Lung	4	Vagina	1
Liver	8	Hypophysis	4	Sympathetics	1
Epithelia	8	Salivary Gland	4	Mammary gland	1
Connective Tissue	8	Parathyroid	4	Prostate	1
Adrenal	7	Ureter	3	Tongue	1
Thyroid	7	Arteries	3	Peritoneum	1

NERVES: DISTRIBUTION

Trigeminal	17	Spinal Accessory	7	Hypoglossal	2
Sympathetic	11	Phrenic	5	Femoral	2
Forearm	10	Lumbar plexus	5	Intercostal	2
Parasympathetic	9	Optic	4	Typical spinal	2
Brachial plexus	9	Cervical plexus	3	Chorda tympani	2
Vagus	8	Oculomotor	3	Sacral plexus	1
Sciatic	8	Abducens	3	Spinal ganglia	1
Facial	7	Auditory	2	Proprioceptive	1

NERVE SUPPLY TO MUSCLES AND ORGANS

Heart	8	Pelvic viscera	3	Sacrospinalis	1
Lung	6	Thumb	1	Occipito-frontalis	1
Taste	5	Temporalis	1	Anterior Tibial	1
Thyroid Gland	4	Voluntary Muscle	1	Ovary	1
Trapezius	3	Testicle	1	Skin	1
Abdominal	3	Gastro-intestinal tract	1	Blood vessels	1
Shoulder muscles	3	Nasal sinuses	1	Suprarenal	1

MUSCLES: ORIGIN, INSERTION, RELATIONS

Shoulder	25	General	7	of Pelvis	1
Forearm	12	Diaphragm	7	Spermatic cord	1
Leg	12	Hand	6	Eye ball	1
Neck	11	Psoas Major	4	Occipito-frontalis	1
Pectorals	10	Trapezius	4	Foot	1
Abdominal	9	Hip	4	Pharynx	1
Thigh	9	Perineum	3	Eye lid	1
Mastication	8	Serratus anterior	2	Supraspinatus	1

BLOOD SUPPLY TO STRUCTURES

Nasal sinuses	13	Tonsil	4	Mammary gland	2
Peritoneum	11	Kidney	4	Body wall	1
Pharynx	10	Lung	4	Diploe	1
Brain	9	Colon	4	Knee	1
Liver	8	Appendix	3	Shoulder joint	1
Heart	5	Uterus	3	Ovary	1
Pancreas	5	Testicle	2	Tongue	1
Thyroid	5	Spleen	2	Suprarenal	1

EMBRYOLOGY

Pharynx	9	G. I. tract	5	Ear	2
Heart	9	Gonads	4	Blood	2
Mesonephros	8	Peripheral N. S.	3	Thymus	2
Uterus	7	Eye	3	Liver, pancreas	2
Placenta	6	Hypophysis	3	Fetal circulation	1
Aortic aches	6	Central N. S.	3	Urachus	1
Bone, Spine	6	Thyroid	2	Muscle (all)	1
Embryonic membranes	5	Spermogenesis	2	Tooth	1
Kidney, ducts	5	Adrenal	2	Zona pellucida	1

ARTICULATIONS AND LIGAMENTS

Shoulder 18	Foot 12	Pelvis 5
Forearm 18	Knee joint 10	Vertebral column 3
General 12	Hip joint 8	Mandible 1

GLANDS: EXOCRINE

Pancreas 15	Kidney 6	Meibomian 1
Salivary 8	of Urethra 5	Bartholin 1
Prostate 7	Mammary 4	Nabothian 1
of Skin 7	Lacrimal 1	

BLOOD VESSELS, DISTRIBUTION

General 13	Jugulars 2	Chorioid plexus 1
Portal veins 8	Celiac artery 2	Basilic veins 1
Subclavian artery 5	Inferior Mesenteric A. .. 2	Sup. Vena Cava 1
External Carotid 4	Hemorrhoidal A. 1	Saphenus vein 1
Azygos veins 3	Coronary artery 1	Cephalic vein 1
To Leg 3	Ext. Iliac artery 1	Valveless veins 1
To Hand 2	Veins of Galen 1	

FASCIA AND SHEATHS

Hand 16	Abdominal wall 12	Cervical 4
Pelvis 12	Hernias 9	Superficial 2

BONES

Skull 14	Foot 5	Scapula 1
Skull foramini 13	Pelvic girdle 4	Sternum 1
Vertebrae 6	Hyoid 3	Mandible 1

LYMPHATICS

Cisterna Chyla 9	Tonsil; Peyer's P. 4	Inguinal 2
of Mammary glands..... 7	Lungs 3	Vessels 2
of Mesenteries 5	Tongue 2	Oral, nasal 1

CENTRAL NERVOUS SYSTEM

Brain 18	Meninges 7	Motor tracts 2
Spinal cord 7	Cerebrospinal fluid 4	Magendie's foramen 1

GLANDS, ENDOCRINE

Adrenal 8	Thyroid 5	Testis 1
Hypophysis 7	Parathyroid 3	Carotid body 1
	Isles of Langerhans 2	

CROSS SECTIONS

Abdomen 4	Thigh 2	Thorax 1
Leg 3	Forearm 2	Wrist 1
	Spinal cord 1	

SUMMARY AND CONCLUSIONS

1. In the maze of anatomic detail to which examining boards in anatomy refer, some structures are mentioned much more often than others. For instance —the small intestine in this survey was mentioned 59 times; the liver, 46; the heart, 45; the shoulder, 44; the pancreas, 34; the large intestine, 30; and the

ovary and thyroid gland each 23 times, as against only one to four references to such structures as the testis, auditory nerve, chorioid plexus, peritoneum, inguinal canal, etc.

2. Anatomy being largely a descriptive subject, 78.4 per cent of the questions were for description, definition or direct information.

3. Since roughly 79 per cent of the references were to gross structure or relations, and 21 per cent to embryology and histology, it is obvious that gross anatomy is dominant in the minds of examiners.

4. However, in the listed comparative number of references to the classes of anatomic structures, histology holds second place with 183 references, and embryology sixth place with 101 references, in the list of 15 headings. Such consideration of these subjects is more or less recent.

5. The large number of structures to each of which only one or two references are made only suggests the vast range of detail in anatomy to which reference may be made. It further suggests the feasibility of approach to the subject from the standpoint of principles, which, in turn, will involve the details.

6. Any survey of the range and type of questions asked in anatomy indicates that a broad general knowledge of the whole subject is necessary for success in examinations. It also indicates the futility of mere factual knowledge.

I wish to thank the officials of the examining boards who so kindly submitted questions. Any criticism will be gratefully received.

Reserves for Preclinical and Clinical Courses*

JUDITH WALLEN HUNT

Librarian, Bio-Medical Libraries, University of Chicago,
Chicago, Illinois

It is the responsibility of a medical library to make available to students texts and treatises suitable for the various courses included in the curriculum of the school which it serves. The library must identify the needs of its readers and take the initiative in the acquisition of new and revised editions as published and in the purchase of entirely new works not yet included in reference lists. A sufficient number of references can be made available either by a large number of duplicate copies, or by a comparable number of separate titles. For the professional student it would seem a better policy to purchase separate titles. At the end of the medical course he will thus have acquired familiarity with several texts on a given subject, rather than just two or three. He will have developed certain critical faculties and preferences. He will consider one author more lucid on a given subject than another. A good text supplements class instruction and may properly be considered as an important addition to the teaching staff. Obviously, when the demand dictates, duplicate copies of a few outstanding texts must be purchased. As the reserve shelf integrates the library with the instructional program, the librarian must give careful consideration to recommendations made by the faculty and to suggestions made by students.

The present study tabulates texts in preclinical and clinical courses which have been found the most important in terms of repeated use. Charging cards for preclinical and clinical texts were saved during one entire year. For each title the number of charges were counted and works were listed under subject in order of declining use. Whenever a new edition has appeared during the year it has automatically replaced the previous edition and total charges for both works have been assigned to the latest edition. This procedure has seemed proper for in science a new edition soon supersedes the old in use. In the case of first editions which have become immediately popular, but which have been available for only part of the year, total charges have been multiplied by the proper factor in order to express results in terms of a year. Desk attendants have been instructed always to offer an alternative work, if the book requested is not available. Such substitutes are practically always accepted. Thus the students become familiar with all reserves available on a given subject. Intelligent preference can be shown only after such familiarity has been gained. For these reasons we feel that the present study reflects fairly accurately student preferences.

In examining the list of titles given below it must constantly be kept in mind that no attempt has been made to ascertain the intrinsic value of the works enumerated. Titles are listed in order of declining use.

*Accepted for publication, September, 1938.

I. PRECLINICAL RESERVES

Anatomy, Human:

GRAY, HENRY
Anatomy of the human body. 23d ed., thoroughly rev. and re-edited by Warren H. Lewis. Philadelphia, Lea & Febiger, 1936.

CUNNINGHAM, DANIEL J. *ed.*
Cunningham's Textbook of anatomy. 7th ed. New York, Oxford university press, 1937.

MORRIS, SIR HENRY, *ed.*
Morris' Human anatomy. 9th ed. Philadelphia, P. Blakiston's Son & Co., 1933.

GRANT, JOHN C. B.
A method of anatomy. Baltimore, Wm. Wood & Co., 1937.

PIERSOL, GEORGE A., *ed.*
Human anatomy. 9th ed. Philadelphia, J. B. Lippincott Co., 1930.

KIMBER, DIANA C.
Textbook of anatomy and physiology. 9th ed., rev. and rewritten. New York, The Macmillan Co., 1934.

Bacteriology:

ZINSSER, HANS
A textbook of bacteriology. 7th ed. New York, D. Appleton-Century Co., 1934.

JORDAN, EDWIN O.
A textbook of general bacteriology. 12th ed., rev., fully illustrated. Philadelphia, W. B. Saunders Co., 1938.

GAY, FREDERICK P.
Agents of disease and host resistance. Springfield, Ill., C. C. Thomas, 1935.

TOPLEY, WILLIAM W. C.
The principles of bacteriology and immunity. 2nd ed. Baltimore, W. Wood & Co., 1936.

FAIRBROTHER, RONALD W.
A textbook of medical bacteriology. London, W. Heinemann, 1937.

HENRICI, ARTHUR T.
The biology of bacteria. Boston, D. C. Heath and Co., 1934.

STITT, EDWARD R.
Practical bacteriology, haematology and animal parasitology. 9th ed. Philadelphia, P. Blakiston's Son and Co., 1938.

RICE, THURMAN B.
A textbook of bacteriology, 2nd ed., rev. Philadelphia, W. B. Saunders Co., 1938.

FORD, WILLIAM W.
Text-book of bacteriology. Philadelphia. W. B. Saunders Co., 1927.

PARK, WILLIAM H.
Pathogenic microorganisms. 9th ed., enl. and thoroughly rev. Philadelphia, Lea & Febiger, 1929.

Biochemistry:

HARROW, BENJAMIN, *ed.*
A textbook of biochemistry. Philadelphia, W. B. Saunders Co., 1935.

BODANSKY, MEYER
Introduction to physiological chemistry. 4th ed. New York, J. Wiley & Sons, 1938.

GORTNER, ROSS A.
Outlines of biochemistry. 2nd ed. New York, J. Wiley & Sons, 1938.

HAWK, PHILIP B.
Practical physiological chemistry. 11th ed. Philadelphia, P. Blakiston's Son and Co., 1937.

MATHEWS, ALBERT P.
Principles of biochemistry. Baltimore, W. Wood & Co., 1936.

PETERS, JOHN P.
Quantitative clinical chemistry. Baltimore, Williams & Wilkins Co., 1931-32. 2v.

MATHEWS, ALBERT P.
Physiological chemistry. 5th ed. New York, W. Wood and Co., 1930.

Embryology:

AREY, LESLIE B.
Developmental anatomy. 3rd ed. rev. Philadelphia, W. B. Saunders Co., 1934.

PATTEN, BRADLEY M.
The early embryology of the chick. 3rd ed. Philadelphia, P. Blakiston's Son & Co., 1929.

PATTEN, BRADLEY M.
The embryology of the pig. 2nd ed. Philadelphia, P. Blakiston's Son & Co., 1931.

LILLIE, FRANK R.
The development of the chick. 2nd ed., rev. New York, H. Holt and Co., 1919.

JORDAN, HARVEY E.
A textbook of embryology. 3rd ed. New York, D. Appleton-Century Co., 1937.

BAILEY, FREDERICK R.
Text-book of embryology. 5th rev. ed. New York, W. Wood and Co., 1929.

SHUMWAY, WALDO
Introduction to vertebrate embryology. 3rd ed., rev. and enl. New York, J. Wiley & Sons, 1935.

MCEWEN, ROBERT S.
Vertebrate embryology. Rev. New York, H. Holt and Co., 1931.

Histology:

MAKSIMOV, ALEKSANDR A.
A text-book of histology. 3rd ed. completely rev. Philadelphia, W. B. Saunders Co., 1938.

COWDRY, EDMUND V., *ed.*
Special cytology. 2nd ed. New York, P. B. Hoeber, 1932. 3v.

JORDAN, HARVEY E.
A textbook of histology. 7th ed. New York, D. Appleton-Century Co., 1937.

COWDRY, EDMUND V.
A textbook of histology. 2nd ed. Philadelphia, Lea & Febiger, 1938.

BAILEY, FREDERICK R.
Bailey's Text-book of histology (Elwyn and Strong) rev. and rewritten by Philip E. Smith. 9th ed. Baltimore, W. Wood & Co., 1936.

SHARPEY-SCHAFER, SIR EDWARD A.
Essentials of histology. 13th ed. Philadelphia, Lea & Febiger, 1934.

WILSON, EDMUND B.
The cell in development and heredity. 3rd ed. rev. and enl. New York, The Macmillan Co., 1925.

STÖHR, PHILIPP
A text-book of histology, arranged upon an embryological basis, by J. Lewis Bremer. 5th ed. of "Lewis and Stöhr." Philadelphia, P. Blakiston's Son & Co., 1936.

Immunology:

GAY, FREDERICK P.
Agents of disease and host resistance. Springfield, Ill., C. C. Thomas, 1935.

TOPLEY, WILLIAM W. C.
The principles of bacteriology and immunity. 2nd ed. Baltimore, W. Wood & Co., 1936.

ZINSSER, HANS
Resistance to infectious diseases. 4th ed., completely rev. and reset. New York, The Macmillan Co., 1931.

WELLS, HARRY G.
The chemical aspects of immunity. 2nd (rev. and enl.) ed. New York, Book dept., The Chemical catalog Co., 1929.

SHERWOOD, NOBLE P.
Immunology. St. Louis, The C. V. Mosby Co., 1935.

JORDAN, EDWIN O.
The newer knowledge of bacteriology and immunology. Chicago, The University of Chicago Press, 1928.

See Also Bacteriology

Neurology:

RANSON, STEPHEN W.
The anatomy of the nervous system, from the standpoint of development and function. 5th ed., rev. Philadelphia, W. B. Saunders Co., 1935.

HERRICK, CHARLES J.
An introduction to neurology. 5th ed., thoroughly rev. Philadelphia, W. B. Saunders Co., 1931.

TILNEY, FREDERICK
The form and function of the central nervous system. 3rd ed. New York, P. B. Hoeber, 1938.

KUNTZ, ALBERT
A text-book of neuro-anatomy. 2nd ed. thoroughly rev. Philadelphia, Lea & Febiger, 1936.

RASMUSSEN, ANDREW T.
The principal nervous pathways. New York, The Macmillan Co., 1932.

Parasitology:

CHANDLER, ASA C.
Introduction to human parasitology. 5th ed. rewritten and enl. New York, J. Wiley & Sons, 1936.

HEGNER, ROBERT W.
Parasitology, with special reference to man and domesticated animals. New York, D. Appleton-Century Co., 1938.

CRAIG, CHARLES F.
Clinical parasitology. Philadelphia, Lea & Febiger, 1937.

WENYON, CHARLES M.
Protozoology; a manual for medical men, veterinarians and zoologists. London, Bailliere, Tindall and Cox, 1926. 2v.

BLACKLOCK, DONALD B.
A guide to human parasitology for medical practitioners. 2nd ed. Baltimore, W. Wood and Co., 1935.

KNOWLES, ROBERT
An introduction to medical protozoology. Calcutta, Thacker, Spink & Co., 1928.

HEGNER, ROBERT W.
Human protozoology. New York, The Macmillan Co., 1924.

FAUST, ERNEST C.
Human helminthology. Philadelphia, Lea & Febiger, 1929.

THOMSON, JOHN G.
Protozoology. London, Bailliere, Tindall and Cox, 1929.

FANTHAM, HAROLD B.
The animal parasites of man. London, J. Bale Sons & Danielson, 1916.

RILEY, WILLIAM A.
Medical entomology. 2nd ed. New York, McGraw-Hill book Co., 1938.

MATHESON, ROBERT
Medical entomology. Springfield, Ill., C. C. Thomas, 1932.

Physiology:

BEST, CHARLES H.
The physiological basis of medical practice. Baltimore, W. Wood & Co., 1937.

CARLSON, ANTON J.
The machinery of the body. Chicago, The University of Chicago press, 1937.

MACLEOD, JOHN J. R.
Physiology in modern medicine. 8th ed. St. Louis, The C. V. Mosby Co., 1938.

HOWELL, WILLIAM H.
A text-book of physiology for medical students and physicians. 13th ed., thoroughly rev. Philadelphia, W. B. Saunders Co., 1936.

STARLING, ERNEST H.
Starling's principles of human physiology. 7th ed., edited and revised by C. Lovatt Evans. London, J. & A. Churchill, 1936.

MITCHELL, PHILIP H.
A textbook of general physiology for colleges. 3rd ed. New York, McGraw-Hill book Co., 1938.

WRIGHT, SAMSON
Applied physiology. 6th ed. New York, Oxford University Press, 1936.

WIGGERS, CARL J.
Physiology in health and disease. 2nd ed., thoroughly rev. Philadelphia, Lea & Febiger, 1937.

MARTIN, HENRY N.
The human body; its structure and activities and the conditions of its healthy working. 12th ed., thoroughly rev. by Ernest G. Martin. New York, H. Holt and Co., 1934.

STEWART, GEORGE N.
A manual of physiology, with exercises. 8th ed. New York, W. Wood & Co., 1918.

BAYLISS, SIR WILLIAM M.
Principles of general physiology. 4th ed. New York, Longmans, Green and Co., 1931.

HAGGARD, HOWARD W.
The science of health and disease; a textbook of physiology and hygiene. New York, Harper and brothers, 1927.

WIGGERS, CARL J.
Modern aspects of the circulation in health and disease. 2nd ed., thoroughly rev. Philadelphia, Lea & Febiger, 1923.

ROAF, H. E.
A textbook of physiology. 2nd ed. Baltimore, William Wood & Co., 1936.

II. CLINICAL RESERVES

Dermatology and Syphilology:

ORMSBY, OLIVER S.
A practical treatise on diseases of the skin. 5th ed., thoroughly rev. Philadelphia, Lea & Febiger, 1937.

BECKER, SAMUEL W.
Commoner diseases of the skin. New York, National Medical Book Co., 1935.

STOKES, JOHN H.
Modern clinical syphilology. Philadelphia, W. B. Saunders Co., 1934.

Diagnosis:

TODD, JAMES C.
Clinical diagnosis by laboratory methods. 8th ed., thoroughly rev. Philadelphia, W. B. Saunders Co., 1935.

GOLDEN, ROSS, *ed.*
Diagnostic roentgenology. New York, T. Nelson and sons, 1936.

KOLMER, JOHN A.
Approved laboratory technic. 2nd ed., rewritten, rev. and reset. New York, D. Appleton-Century, 1938.

FRENCH, HERBERT
An index of differential diagnosis of main symptoms. 5th ed. Baltimore, W. Wood and Co., 1936.

BUCK, ROBERT W.
The essentials of physical diagnosis. Philadelphia, W. B. Saunders Co., 1934.

CABOT, RICHARD C.
Physical diagnosis. 12th ed. Baltimore, W. Wood & Co., 1938.

MAJOR, RALPH H.
Physical diagnosis. Philadelphia, W. B. Saunders Co., 1937.

Ear, Nose, Throat—Diseases:

TURNER, ARTHUR L.
Diseases of the nose, throat and ear. 4th ed. rev. and enl. New York, W. Wood and Co., 1936.

JACKSON, CHEVALIER, *ed.*
The nose, throat, and ear and their diseases. Philadelphia, W. B. Saunders Co., 1929.

THOMSON, SIR ST. CLAIR
Diseases of the nose and throat. 4th ed. New York, D. Appleton-Century Co., 1937.

Heart—Diseases:

WHITE, PAUL D.
Heart disease. 2nd ed. completely rewritten and reset. New York, The Macmillan co., 1937.

LEWIS, SIR THOMAS
Diseases of the heart. 2nd ed. New York, The Macmillan Co., 1937.

LEVINE, SAMUEL A.
Clinical heart disease. Philadelphia, W. B. Saunders Co., 1936.

Medicine:

CECIL, RUSSELL L.
A textbook of medicine, by American authors. 4th ed. Philadelphia, W. B. Saunders Co., 1937.

MEAKINS, JONATHAN C.
The practice of medicine. St. Louis, The C. V. Mosby Co., 1936.

OSLER, SIR WILLIAM
The principles and practice of medicine. Revised by Henry A. Christian. 13th ed. New York, D. Appleton-Century Co., 1938.

MUSSER, JOHN H.
Internal medicine. 3rd ed. thoroughly rev. Philadelphia, Lea & Febiger, 1938.

PRICE, FREDERICK W. *ed.*
A textbook of the practice of medicine by various authors. 5th ed. London, Oxford university press, 1937.

Neurology:

GRINKER, ROY R.
Neurology. 2nd ed. Springfield, Ill., C. C. Thomas, 1937.

BRAIN, WALTER R.
Diseases of the nervous system. London, Oxford university press, H. Milford, 1933.

BAILEY, PERCIVAL
Intracranial tumors. Springfield, Ill., C. C. Thomas, 1933.

WECHSLER, ISRAEL S.
A textbook of clinical neurology with an introduction to the history of neurology. 3rd ed., reset. Philadelphia, W. B. Saunders Co., 1935.

FREEMAN, WALTER J.
Neuropathology; the anatomical foundations of nervous diseases. Philadelphia, W. B. Saunders Co., 1933.

Ophthalmology:

MAY, CHARLES H.
Manual of the diseases of the eye. 15th ed., rev. Baltimore, W. Wood and Co., 1937.

PARSONS, SIR JOHN H.
Diseases of the eye. 9th ed. New York, The Macmillan Co., 1938.

GIFFORD, SANFORD R.
A textbook of ophthalmology. Philadelphia, W. B. Saunders Co., 1938.

Obstetrics and Gynecology:

DELEE, JOSEPH B.
The principles and practice of obstetrics. 7th ed. Philadelphia, W. B. Saunders Co., 1938.

CROSSEN, HENRY S.
Diseases of women. 8th ed., entirely rev. and reset. St. Louis, The C. V. Mosby Co., 1935.

CURTIS, ARTHUR H.
A textbook of gynecology. 3rd ed. reset. Philadelphia, W. B. Saunders Co., 1938.

WILLIAMS, JOHN W.
Obstetrics. 7th ed. rev. and enl. New York, D. Appleton-Century, 1936.

BECK, ALFRED C.
Obstetrical practice. Baltimore, Williams and Wilkins Co., 1935.

ADAIR, FRED L.
Obstetric medicine. Philadelphia, Lea & Febiger, 1934.

Orthopedics:

SHANDS, ALFRED R.
Handbook of orthopaedic surgery. St. Louis, The C. V. Mosby Co., 1937.

MERCER, WALTER
Orthopedic surgery. 2nd ed. Baltimore, William Wood and Co., 1936.

LEWIN, PHILIP
A textbook of orthopedic surgery. 2nd. ed., rev. and entirely reset. Philadelphia, W. B. Saunders Co., 1934.

OSGOOD, ROBERT B.
Fundamentals of orthopaedic surgery. New York, The Macmillan Co., 1931.

Pathology:

BOYD, WILLIAM
The pathology of internal diseases. 2nd ed., thoroughly rev. Philadelphia, Lea & Febiger, 1935.

BOYD, WILLIAM
A textbook of pathology. 3rd ed. Philadelphia, Lea & Febiger, 1938.

MACCALLUM, WILLIAM G.
A textbook of pathology. 6th ed. entirely reset. Philadelphia, W. B. Saunders Co., 1936.

KARSNER, HOWARD T.
Human pathology. 5th ed., rev. Philadelphia, J. B. Lippincott Co., 1938.

SMITH, LAWRENCE W.
Essentials of pathology. New York, D. Appleton-Century Co., 1938.

BOYD, WILLIAM
Surgical pathology. 4th ed. Philadelphia, W. B. Saunders Co., 1938.

MALLORY, FRANK B.
Pathological technique. Philadelphia, W. B. Saunders Co., 1938.

BELL, ELEXIOUS T., *ed.*
A textbook of pathology. 3rd ed. enl. and thoroughly rev. Philadelphia, Lea & Febiger, 1938.

Pediatrics:

HOLT, LUTHER E.
Holt's diseases of infancy and childhood. 10th ed. rev. New York, D. Appleton-Century, 1936.

GRIFFITH, JOHN P. C.
The diseases of infants and children. 2nd ed., rev. and reset. Philadelphia, W. B. Saunders Co., 1937.

MARRIOTT, WILLIAMS M.
Infant nutrition. 2nd ed. St. Louis, The C. V. Mosby Co., 1935.

Pharmacology:

SOLLMAN, TORALD H.
A manual of pharmacology and its application to therapeutics and toxicology. 5th ed., entirely reset. Philadelphia, W. B. Saunders Co., 1936.

CUSHNY, ARTHUR R.
A textbook of pharmacology. 11th ed., thoroughly rev. by C. W. Edmunds and J. A. Gunn. Philadelphia, Lea & Febiger, 1936.

CLARK, ALFRED J.
Applied pharmacology. 6th ed. London, J. & A. Churchill, 1937.

Psychiatry:

STRECKER, EDWARD A.
Practical clinical psychiatry. 4th ed. rewritten and enl. Philadelphia, P. Blakiston's son & Co., 1935.

HENDERSON, DAVID K.
A textbook of psychiatry. 4th ed. New York, Oxford university press, 1936.

WHITE, WILLIAM A.
Outlines of psychiatry. 14th ed. Washington, Nervous and mental diseases publishing Co., 1935.

Surgery:

HOMANS, JOHN, *comp.*
A textbook of surgery. 4th ed. Springfield, Ill. C. C. Thomas, 1936.

CHRISTOPHER, FREDERICK
A textbook of surgery by American authors. Philadelphia, W. B. Saunders Co., 1936.

CALLANDER, CURLE L.
Surgical anatomy. Philadelphia, W. B. Saunders Co., 1933.

BABCOCK, WILLIAM W.
A textbook of surgery. 2nd ed. rewritten. Philadelphia, W. B. Saunders Co., 1935.

Other specials:

FISHBERG, ARTHUR M.
Hypertension and nephritis. 3rd ed., thoroughly rev. Philadelphia, Lea & Febiger, 1934.

ROSENAU, MILTON J.
Preventive medicine and hygiene. 6th ed. New York, D. Appleton-Century Co., 1935.

EWING, JAMES
Neoplastic diseases. 3rd ed., rev. and enl. Philadelphia, W. B. Saunders Co., 1928.

HINMAN, FRANK
The principles and practice of urology. Philadelphia, W. B. Saunders Co., 1935.

BALDWIN, EDWARD R.
Tuberculosis, bacteriology, pathology and laboratory diagnosis. Philadelphia, Lea & Febiger, 1927.

TUFT, LOUIS
Clinical allergy. Philadelphia, W. B. Saunders Co., 1937.

JOSLIN, ELLIOTT P.
The treatment of diabetes mellitus. 6th ed., thoroughly rev. Philadelphia, Lea & Febiger, 1937.

NORRIS, GEORGE W.
Diseases of the chest and the principles of physical diagnosis. 6th ed., rev. Philadelphia, W. B. Saunders Co., 1938.

STOUT, ARTHUR P.
Human cancer. Philadelphia, Lea & Febiger, 1932.

Lists like the foregoing are of ephemeral value. Entirely new publications and new, revised editions of older works are constantly released from the presses. However, there are certain factors which may be used as criteria in the selection of new volumes. These will be enumerated in order of declining importance.

1. REPUTATION OF AUTHOR, EDITOR, OR COMPILER: By following closely scientific news and notes the librarian can keep informed of the outstanding authorities in the field of biomedicine. Publishers' advertisements can be relied upon to call attention to the achievements of distinguished authors whose works they are publishing. The faculty with whom an author is connected reflects on him and on his work. Previous publications by the same author owned by the library can be consulted. From the charging cards can be gleaned data as to their use. Reliable information concerning the author can often be obtained from recent directories such as *American Men of Science, Who's Who in American Medicine, American Doctors and Physicians,* and the *American Medical Directory.*

2. PUBLISHER: It is interesting to note that in the foregoing lists 27 publishers are represented. But of the 145 titles enumerated more than 75 per cent have been released by 10 publishers; more than 45 per cent have been released by 3 publishers. If we consider the clinical texts only, 14 publishers are represented. Of the 69 titles enumerated, 60 are released by 7 publishers; one publisher released 25. As in any endeavor, experience is an important factor in assuring success. So it may be assumed that the publisher with the greatest number of successful texts to his credit in the particular field covered, is more likely to make expert future selections. Below are listed publishers in the field of bio-medicine with major representation in the foregoing lists.

No. of Titles	Firm Name	Place	Year Established
34	W. B. Saunders Company	New York	1888
20	Lea & Febiger	Philadelphia	1785
18	Wm. Wood and Company (Williams and Wilkins)	Baltimore	1804
11	D. Appleton-Century	New York	1825
9	The Macmillan Company	New York	1869
7	P. Blakiston's Son & Co.	Philadelphia	1843
6	C. V. Mosby Company	St. Louis	1906
6	C. C. Thomas	Springfield, Ill.	1928
5	Oxford University Press	London	1478
4	J. Wiley & Sons	New York	1807

3. DATE OF PUBLICATION: In the field of science the date of publication is of great importance. A new work which includes the most recent advances soon supersedes an older text. With few exceptions a preclinical text that is over ten years old, and a clinical text that is more than five years old finds few readers.

4. READABILITY, FORMAT, ILLUSTRATIONS, BIBLIOGRAPHIC CHARACTERISTICS: A clear, simple style with an easy flow of words make a readable text, whereas long, involved sentences make the sequence of ideas difficult to follow. For example, the choice of words and the facile style of Boyd's textbooks of pathology are important factors in their popularity. Too many details confuse rather than help the student. The inclusion of clinical applications in comprehensive preclinical texts stimulates interest. Dull surfaced paper and clear, legible, well spaced type make easy reading. Liberal margins and paragraph divisions with subheads in bold faced type and descriptive chapter headings make an attractive page for a textbook. Illustrations and diagrams help clarify the text. Numerous bibliographical citations are of little value in introductory texts, but are very important in advanced texts. Though a text may be written by an outstanding authority, and be highly recommended by the faculty, it still may not have student approval because it lacks readability. To predict the readability of a new work, the first recourse would be to consult other works by the same author. Should such be wanting, it would be necessary to consult the periodical literature for current articles written by him. If none are found, the book may be purchased on approval, or acquisition postponed until reviews are available. Publishers' announcements give information concerning the number of pages, illustrations and size of new books.

5. NUMBER OF PREVIOUS EDITIONS: The number of editions of a given work indicate its acceptance by readers in the particular subject covered. In the field of belles lettres popular acclaim would not necessarily constitute a reliable criterion. In the sciences, however, popularity of a book is determined by a small, select group capable of more critical appraisal. The fact that a fifth edition of a textbook has been released would indicate past as well as probable future acceptance. But it is likewise true that some "good old reliables" are living on their past reputation and are more acceptable to faculty than to students. Three to four years generally elapse between editions. As the date of reissue rather than copyright date is often given on advertising circulars, reissues are often confused with new editions. Publishers' advertisements generally state the number of a new edition, and tell if it is thoroughly revised, enlarged, rewritten and entirely reset. If no such statement occurs in the announcement and if the number of pages and illustrations tally closely with the old, it is probable that revisions are very minor.

6. PLACE OF PUBLICATION: With few exceptions American are preferred to English texts. Differences of presentation, due to different teaching methods, and differences of terminology limit the use of English texts. Translations of outstanding foreign texts are generally more valuable for collateral reading than for required reading.

7. BOOK REVIEWS AND ANNOTATIONS: Student requests for new texts begin the moment publishers' announcements have appeared in current journals. Much purchasing must, of necessity, be done before reviews are available. For this reason reviews have been listed last in importance in the selection of textbooks. Furthermore experience has demonstrated that reviews are sometimes unreliable. Two reviewers may give diametrically opposed appraisals of a given work. But there is certain information which a good review will give, and the merit of the review can be judged by the inclusion of such data. If the author is not generally known in his profession, the reviewer will introduce him to the reader and show that he is qualified by training and experience to write on the subject. Then follows description and evaluation of content. An analytical, temperate and discriminating review is readily recognized. Too many superlatives may indicate lack of self-restraint and probable bias. Next comes a discussion of the readability. And last there will be a statement regarding format, illustrations, bibliographical characteristics and index. A review which contains little factual information but simply expresses personal opinion has little merit. The reviewer's signature adds authenticity to his work. Many so-called reviews are simply annotations. If several are in agreement as to the merits of a given book, its purchase should be given serious consideration.

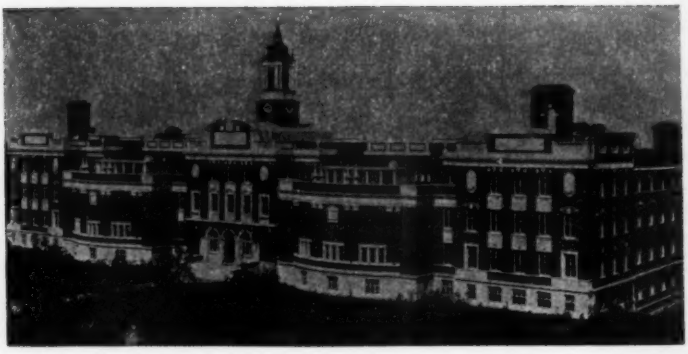
COMMENT

Most medical courses require intensive rather than extensive reading. Therefore, titles enumerated in the foregoing lists will meet the most urgent needs of the preclinical and clinical student. For reasons already mentioned it is advised that if needs dictate more books, different titles be added to the reserves, rather than duplicate copies of works already at hand. It seems a good policy to put all textbooks on reserve as acquired and to instruct desk attendants to call all new books to the attention of students. If after a period of one or two months the book has not created a demand, it should be returned to the stacks. Such removal does not necessarily imply a poor text. It may be that the work is too comprehensive and detailed and has greater value for collateral reading or occasional reference.

Students in medical school are more mature than the average college student. Therefore, motivation of library use does not rest entirely with the faculty. Students read reviews and notices concerning new publications and go to the library to get books for examination. If on repeated occasions they are unsuccessful in securing the volume requested, their interest lags and they form an unfavorable impression of the library. It is definitely the responsibility of the librarian to have new texts available shortly after publication. If four of the criteria listed above are favorable it is safe to order. The occasional mistake that may be made is not wasted if it suggests a pitfall to avoid. Recall the story of the credit manager who was dismissed because he did not have sufficient number of bad accounts. To his superiors this fact meant that the firm was losing a great deal of business because of a too rigid credit policy. Similarly, the librarian who is too hesitant and conservative probably heads a library whose archives are

mouldy from disuse. Timidity has never built, will never build a fine library. For the intelligent promotion of student reading the timely availability of new books is absolutely necessary. It is also important to cull, carefully and continuously, the reserve shelf of all texts that are not in constant use. Demand for such texts will often be increased if they are available for collateral reading on a two weeks loan.

The author is greatly indebted to her assistants for aid in the collection of data for this study. Grateful acknowledgements are particularly due to Miss Caroline Riechers for her active interest in the work, and for valuable suggestions.



Medical Building of the University of Alberta.

Recommendation to Medical Colleges

GARFIELD POWELL
Assistant to the Dean of Columbia College
New York City

It has been claimed that the medical aptitude test (Moss), brought into concordance with the percentiles of each medical school, is of value in the estimation of probable performance in at least the first few years at medical school. It has, in one instance at least, been argued that it has a distinctly higher predictive value than the average premedical grade in the sciences or in general studies[1]. In certain other instances it has been argued that the test may or may not be informative to any particular medical school. Whatever the limits of its usefulness, however, or its comparative value, it must be recognized that it places in the hands of the liaison officers of the medical schools and the arts colleges one test to be added to whatever is available of tests of the "intelligence" type. In nearly all arts colleges such tests are used at some time or another and we have found it useful in the same way that the Thorndike test, the Strong interest tests, etc. are useful to advisers, viz: in a complementary way and not in isolation.

While much work has been reported in the JOURNAL OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES by medical authorities on this problem of selection of students, there seems to be very little work reported by recommending agencies in contribution to this interinstitutional problem. It may be of interest to describe what has been done in a tentative way at Columbia College in this problem of making recommendations on the academic side. These recommendations, it is obvious, should be something more than a mere average of grades if they are to contribute something in the matter, and it does not seem unreasonable to hope that much more can be done by the arts colleges themselves than is now the case. At first glance, indeed, it seems that the logical place for attempts at improvement in prediction should be the arts college since much material is there available which is not available to the medical schools and the performance of the arts college graduates in medical schools is a matter affecting the reputation of the arts college, at least as strongly as the medical school accepting the students. With the records by thirds of the freshmen in medical schools now available, the various intelligence and interest tests also available, the academic performance and much material concerning the person of the applicant, it does not seem unreasonable to hope, even, that an arts college could develop a system of rating students which would compare very favorably with any system of tests applied on a large scale, and that this rating would provide an admitting officer with the best judgment of the college on all factors likely to affect academic performance in one composite rating applicable to the average medical school. It would, then, be the duty of the admitting officer to

1. J. Ass. Am. M. Colls. 13: 389 1938.

translate that rating into the one proper to his own school. In attempting to make such a rating, we have employed the medical aptitude test in the manner described below.

The basic rating for the student is made out as a simple average of the College Thorndike test, medical aptitude test (from the national percentiles), the science average, and the general college average. This is a lumping together of two tests of the "intelligence" type with two records of performance. Inasfar, then, as the "intelligence" tests measure anything which is of value to the medical school, and is different from what is measured by grades, this something is weighted equally with the performance. This basic rating is expressed as a letter rating, A A—, B+, B, B—, C+, C, C— and F. This basic rating is now considered in the light of other factors, such as steadiness of purpose, physical vigor, social adjustment, emotional stability, interest tests, amount of outside work, etc., etc., and by means of a simple rule, adjusted upward or downward at most one half letter, i.e., from C+ to B— or C+ to C. Many of these factors are, of course, the subject of comment to medical school officers on the personality of the applicant, but they are also included here since they are known to affect the chances of satisfactory completion of work in a medical school. Many of these factors, indeed, are taken in absolute fashion by admitting officers in the process of selection because there is no other way of including them and many of them can be identified definitely after the event as the real cause of ruined calculations based on tests and performance only. The purpose of their inclusion is exactly the same as the purpose of lumping together the intelligence and performance tests—to try to reach in empiric fashion some agreement with the figures submitted on the placement of students in the thirds of medical schools.

Such a rating, applied over a group of 182 students admitted to medical school from Columbia College would show the following results: (a) Reading A, A—, B+ as upper third, B, B— as middle third, C+, C, C— as lower third, we should place 57 in the upper third, 84 in the middle third, 41 in the lower third. The actual figures on these students supplied by Dr. Fred C. Zapffe are 63 in upper third, 66 in middle third, and 53 in lower third. The order of weight is correct, but the committee rating throws the middle pile higher than the actual. (b) The college average would place 42 in the upper third, 72 in the middle third, and 66 in the lower third. The order of weight is incorrect (actual 63/66/53). (c) The science average would place 49 in the upper third, 60 in the middle third, and 73 in the lower third. The order of weight is incorrect (actual 63/66/53). (d) The medical aptitude test would place 122 in the top third (counting all above 66 as top third), 40 in middle third (counting 65 to 34 as middle third) and 20 in the lowest third. The order of weight is incorrect and while, perhaps, informative on the comparative status of Columbia College students is the least satisfactory for absolute use in recommendation (actual 63/66/53). The correction of the medical aptitude test for Columbia College alone would, of course, only be useful in a breakdown of

these composite figures. Of correct placements the science average gives 88, the college average 87, the committee rating 81, and the medical aptitude test 71 in its original form.

In errors weighted approximately with distance from the actual mark, the proportion was, roughly, medical aptitude test 14 to science average 10, college average 10 and committee rating 9.

	M. A. T.	Sc. Av.	Coll. Av.	Rating	Actual
Upper third	122	49	42	57	63
Middle third	40	60	72	84	66
Lower third	20	73	66	41	53

	Correct placement	Errors (ratio)
Medical Aptitude Test	71	14
College Average	87	10
Science Average	88	10
Rating	81	9

For use in recommendation, the rating seems barely preferable to the college average in its present form. Further analysis of the figures is being made in the hope that by the use of adjustments, such as the medical aptitude test correction for the college itself, the number of correct placements can be raised and the errors lowered.

A Course in "Orientation to Practice"

At the University of Minnesota Medical School
Minneapolis

In the spring quarter of the academic year 1938-1939, a course named "orientation to practice" will be introduced by the Medical School of the University of Minnesota. It will consist of eleven lectures to be delivered by nine selected lecturers. The subjects are of immediate interest to the young graduate. This course recalls one given by most medical schools thirty and forty years ago. It was based on a book entitled "The Physician Himself" and written by Dr. J. M. Matthews, of Louisville, Kentucky. The Minnesota course is as follows:

ORIENTATION TO PRACTICE—SPRING 1939

(Schedule of Lectures)

April 7.—OPPORTUNITIES IN AND PREPARATION FOR PRACTICE
General practice, specialization; industrial medicine; government service; insurance medicine; teaching and research; graduate and postgraduate training. Dr. H. S. Diehl.

April 14.—MEDICAL LICENSURE
State and national boards; basic science boards; reciprocity; narcotic licenses; responsibilities of licensure; revocation of license to practice medicine. Dr. A. Adson.

April 21.—THE ETHICS OF THE PRACTICE OF MEDICINE
Responsibility of physicians to their patients and to each other; consultations; fee splitting; relationship to druggists, to nurses; birth control; sterilization; abortions; euthanasia. Dr. S. M. White.

April 28.—THE MANAGEMENT OF THE PUBLIC AND PRIVATE PATIENT
Winning the patient's confidence; the diagnosis; the prognosis; cooperation of the patient in carrying out treatment; the patient's family; his job; his bills for medical and hospital care. Dr. S. M. White.

May 5.—STARTING THE PRACTICE OF MEDICINE
Choosing a location; problems of the young practitioner; relationship to other physicians; to hospitals; getting acquainted; determination of fees; individual and group practice. Dr. O. J. Hagen.

May 12.—QUACKERY, FADS, CULTS AND PATENT MEDICINES
Definition and description; reasons for existence; relationship to the practice of medicine and to the public health; attempts at control; borderline types of practice by physicians. Dr. W. A. O'Brien.

May 19.—MALPRACTICE
Definition; justified and unjustified malpractice suits; examples; safeguards against malpractice; malpractice insurance. Mr. Ray Scallen.

May 26.—THE PHYSICIAN IN COURT
In industrial compensation cases; as an expert witness in criminal suits; in personal injury suits; in malpractice suits. Judge Paul Carroll.

June 2 & 9.—MEDICAL CARE OF THE INDIGENT AND OF LOW INCOME GROUPS
Cost of medical care; system of individualistic practice; free and pay clinics; state medicine; health insurance; hospital insurance, attitude of organized medical profession; trends in this country. Dr. R. E. Scammon.

June 16.—MEDICAL ORGANIZATIONS
National, State and local; purpose; types of organizations; activities; advantages of membership. Dr. C. B. Wright.

JOURNAL
OF THE
Association *of* American Medical Colleges

Volume 14 MAY, 1939 Number 3

Graduate Medical Education

"Considerable progress is being made in the clarification of the place of the internship, the residency, the short postgraduate courses and other educational opportunities in the broad field of graduate medical education," declared Dr. Willard C. Rappleye, chairman of the Commission on Graduate Medical Education, following a meeting of the Commission in New York City on April first. "With the cooperation of medical and hospital leaders, the Commission hopes to offer constructive suggestions regarding needs now existing in the field of graduate medical education and opportunities for developing more adequate educational facilities by medical schools, hospitals, national and local medical organizations and specialty societies. It is felt that the need for more adequate graduate and postgraduate medical training is pressing and has been sharpened by the formation of the twelve specialty boards. It is gratifying to find that interest in these fields is now so widespread that it appears certain that hospitals, medical schools and other agencies will develop satisfactory programs to meet this need in the near future."

The Commission expects to complete its work within a year and at that time will publish a full report of its findings and conclusions.

◆ ◆

Postgraduate Study in Germany

Announcement is made of many opportunities for postgraduate work in medicine in twelve centers in Germany during June, July and August in the fields of dermatology, radiology, plastic surgery, urology, stomatology, thoracic and abdominal surgery. orthopedic and emergency surgery, pediatrics, neurology, allergy, dietetics, renal-cardiovascular diseases, etc. Foreign physicians are offered a reduction of 60 per cent in railroad fares in Germany, and by taking advantage of the "register" marks, the cost of living in Germany can be reduced considerably.

For further information, address "Aerztliches Fortbildungswesen, Berlin, N.W. 7, Robert Koch Platz 7.

◆ ◆

Advisory Council on Medical Education, Licensure and Hospitals

Acting on the authorization given him by the Association at the annual meeting held in Syracuse, New York, October 24-26, 1938, Dr. W. C. Rappleye, president, called a meeting of representatives from eleven national professional associations designated at the time, in Chicago, February 11, 1939, for the purpose of discussing the organization of a National Council on Medical Education, Licensure and Hospitals.

The meeting was held. The plan for the organization of a Council as proposed at the Syracuse meeting of the Association of American Medical Colleges was discussed by twenty-four representatives of national organizations and associations. It was decided that a proper name for such an organization should be "Advisory Council on Medical Education, Licensure and Hospitals." The purposes of this Council are defined in the following resolution:

"RESOLVED, that the following is a statement of the purpose of this Council: This Council is created to meet the need of a body representing the medical profession, universities, medical schools, hospitals, licensing bodies, specialty

boards, public health agencies and other national organizations in this country which deal with the different phases of medical education. The Council shall serve as a clearing house for the cooperative consideration of those problems and programs of professional training with which more than one organization is concerned; shall serve as a medium for consultation and mutual assistance in the formulation and support of adequate educational standards and as an agency for advice and recommendations to member and other organizations dealing with medical education."

◆ ◆

Fiftieth Anniversary Meeting Of Association of American Medical Colleges

October 23-25, 1939, will be held the fiftieth anniversary meeting of the Association of American Medical Colleges at Cincinnati, Ohio, under the presidency of Dr. Willard C. Rappleye, dean Columbia University College of Physicians and Surgeons. A review of the accomplishments of the Association gives ample occasion for gratification. Many valuable surveys of medical education have been made. The inspection of medical colleges was initiated by the Association in 1905. Epoch making papers have been read at its annual meetings by authorities on education and teaching. Numerous reforms in teaching methods have been instituted. As early as 1926, the Association began to lay down a program for graduate medical education which has since been adopted by the various specialty boards as a basis for their work. The activities of the Association are so varied, extending into every phase of education, including medical education, that it is not possible in a brief statement such as this to make mention of all these activities. Not the least of these is the publication of this JOURNAL which has been accepted everywhere as the outstanding contribution to medical education, a field in which it is the sole representative.

At the semicentennial meeting, symposia will be held on "Internships and Residencies," "Student Health Service" and "Graduate Medical Education." Attendance at the annual meetings is unrestricted. Anyone who is interested, directly or indirectly, in medical education and teaching is welcome and may, if he desires, participate in the discussions. Membership of a medical college in the Association embraces every member of the faculty. Therefore, if membership is placed on the basis of faculty membership, the membership of the Association numbers about 17,000, distributed in the United States and Canada. By colleges, the membership is 85, three of the colleges being postgraduate or graduate schools or both.

◆ ◆

Intern Appointment

A committee representing the American Hospital Association and the Association of American Medical Colleges has sent out a letter to about four hundred hospitals of the United States seeking cooperation in endeavoring to set a definite date on which all hospitals will announce the appointment of interns.

After considerable discussion by representatives of the two associations, it was decided that an acceptable date for all hospitals would be November 15th. Inasmuch as the information given out by medical colleges as to the scholastic standing of their students is based on the work of the student during the first three years of the medical course, this date will not make any change in that procedure. So far as the students are concerned, the matter of intern appointment will be settled at a time which will remove anxiety soon enough so that they can settle down to the serious work of the fourth year. At present, appointments are made on many dates, some early, some late, so that the student often does not know until he is well into his senior year whether his application for a position has been accepted. This causes him much worry and interferes with the quality of his work in college. Therefore, the reaction of hospitals to the suggestion to announce intern appointments on November 15th is awaited with a great deal of interest.

College News

Western Reserve University
School of Medicine

For several years this School of Medicine has offered each year an extra-curricular series of lectures designed to broaden the knowledge of the student on topics which are not included in the curriculum. The 1937-1938 lectures dealt with the historical aspects of medicine. The 1938-1939 series covered the social and economic aspects of medicine. The March lectures dealt with sickness and disability as a national problem; adequate medical care; cost of medical care to groups, individuals and the nation. The April lectures dealt with "the medical billion and where it goes." They covered also cooperative efforts of physicians, dentists, nurses and pharmacists. Quacks, cults and sects were also discussed. The May lectures will cover public health; health insurance; voluntary prepayment plans for medical care; group medical care for farm families; workmen's compensation and medical care for the nation. The lecturers are members of the faculty and invited guests from the outside. These lectures are free. The May lectures will be delivered on the 5th, 7th and 9th.

The Commonwealth Fund of New York recently granted to the Institute of Pathology $8,360 to be used in studies of the chemistry of immunity. This work has been in progress for two years under the leadership of Enrique Eduardo Ecker, Ph.D., associate professor of immunology.

President Winfred G. Leutner of Western Reserve University announces a grant to Dr. Carl J. Wiggers, professor of physiology of the School of Medicine, of $4,100 from the John and Mary Markel Foundation, whose object is "to support research programs in medical science." The grant is for study of the nature of ventricular fibrillation by means of desensitizing the heart.

Louisiana State University
School of Medicine

A home delivery service has been established in the department of obstetrics and gynecology, in cooperation with the Charity Hospital under the direction of Dr. Rupert E. Arnell. The nursing service will be supplied by the Child Welfare and Community Health Association. Students are assigned to the service during the period in which they are assigned to obstetric duty on the wards of the teaching hospitals. They assist the nurse in the preliminary observation of the patient, conduct the delivery under the supervision of residents attached to the Louisiana State University obstetric service in Charity Hospital, and pay postpartal visits for ten days following the birth. Only entirely normal cases are subjected to delivery in the home; all abnormal and operative cases are referred to the hospital.

A series of eight lectures on medical ethics will be given to fourth year medical students. They will immediately follow the lectures on medical economics, which in turn followed the lectures on medical jurisprudence. All of these lectures were given in their present form for the first time this year.

The first lecture, dealing with the personal relations between physician and patient, will be given by Dr. J. T. Nix, Dean of the Graduate School of Medicine of Louisiana State University. Two lectures on hospital administration to be given by Dr. A. J. Hockett, Superintendent of Touro Infirmary, will introduce the student to the hospital environment in which he will work as an intern next year. The lectures by Dr. Louis J. Bristow, Superintendent of the Southern Baptist Hospital, on what the hospital expects of its staff, will carry on the same theme from a more personal standpoint. One lecture on interprofessional relationships by Dr. George S. Bel, Director of the Charity Hospital

of Louisiana at New Orleans, will deal with the relationships among physicians as set down by various codes of ethics, and with the more practical problems of medical practice. The final lectures on fee splitting, by Dr. Isidore Cohn, professor of surgery in the Graduate School of Medicine of Louisiana State University, will close the series.

◆ ◆

University of Toronto
Faculty of Medicine

The University of Toronto announces the award of the Charles Mickle Fellowship for 1939 to Charles Herbert Best, M.A., M.D., D.Sc. F.R.S., professor of physiology in this University, for his contribution in certain branches of physiology, in particular those related to diabetes and carbohydrate metabolism; to histamine and histaminase; to choline and fat metabolism; and to thrombosis and heparin.

This Fellowship, bequeathed by the late Dr. W. J. Mickle, is the income from an endowment of $25,000, and is awarded annually to the member of the medical profession who is considered by the Council of the Faculty of Medicine to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science.

Professor J. Playfair McMurrich, professor emeritus of anatomy, died on February 9th, 1939. He was in his eightieth year and had been retired since 1930.

Professor McMurrich was called to the University of Toronto as professor of anatomy in 1907, a post which he held with great distinction until he retired in 1930. In 1922 he became the first Dean of the School of Graduate Studies in the University, gave to the administrative work close personal attention and by his care and sound judgment contributed largely to its successful development. Professor McMurrich was the author of several books in biology and anatomy in addition to more than one hundred other articles in journals. The publication of his masterly work on Leonardo da Vinci, Anatomist, in 1930, represented another aspect of his ability.

The thirteenth annual Donald C. Balfour lecture was delivered April 5th by Dr. Mont R. Reid, professor of surgery, College of Medicine, University of Cincinnati. The subject of the lecture was "Personal Experiences with Vascular Problems in the Laboratory and in Humans."

A gift of $250,000 from the Rockefeller Foundation toward an endowment for the school of nursing is announced. The department of medical research at the Banting Institute has received from the Supreme Council of the Scottish Rite Masons a grant of $2,500 for research on the insulin and metrazol treatments for dementia praecox. A gift of 200 mg. of radium has been made to the department of medical research by Gilbert A. Labine of the Eldorado radium mines in memory of his son Leonard.

◆ ◆

Stanford University
School of Medicine

Stanford's new center of medical research, will be erected opposite the Stanford Hospital. The building will be named the Ruth Lucie Stern Research Building in honor of the daughter of Mrs. Louis Stern of Palo Alto who furnished the funds for its erection and equipment. Construction will require about five months. It will be used entirely for research and will constitute a unit of the new Medical School group to be used by research students whose discoveries will be utilized in the hospital and teaching units of the school.

Medical research at Stanford is financed in large part by gifts or special grants. The Rockefeller Foundation last year granted $50,000 as a fluid five year fund to support the type of work which will be carried on in the Ruth Stern Building. The Foundation further allocated $5,000 a year contingent on equal funds contributed to the University from other sources.

Miss Else Schilling of San Francisco

gave $5,000 to the Agnes Lemme Schilling Fund for medical research or fellowships.

The twenty-seventh course of Lane Lectures will be delivered by Dr. Thomas M. Rivers, director of the Rockefeller Institute Hospital for Medical Research May 22-26, 1939, in Lane Hall. Dr. Rivers will speak on "Lymphocytic Choriomeningitis;" "Pathology of Virus Diseases," Immunological and Serological Phenomena of Virus Diseases," "Nature of Viruses," and "Treatment and Prevention of Virus Diseases." The medical profession, students, teachers and research workers in medicine and allied sciences are invited to attend these lectures.

◆ ◆

Tulane University of Louisiana School of Medicine

Appointment, by the Board of Administrators of the Tulane Educational Fund, of Dr. Maxwell Edward Lapham as dean elect of the School of Medicine of The Tulane University of Louisiana, is announced by President Rufus C. Harris.

The present dean, Dr. Charles C. Bass, will reach the University's retiring age early in 1940 and the duties of the dean's office will be taken over by Dr. Lapham at that time.

Dr. Lapham is 39 years of age and was born and reared in Niagara County, New York. His college education, academic and medical, was received at the University of Pennsylvania, where he was awarded his M.D. degree in 1925.

Following his graduation he served a two years' general internship at the Presbyterian Hospital in Philadelphia. After his internship he spent several months during 1927 at the International Grenfell Hospital in Labrador, as house surgeon. This was followed by a two years' residency in the University Hospital, Philadelphia; the first year as resident in obstetrics and chief resident of the hospital; the second year as chief resident in obstetrics.

After completing his hospital residency, Dr. Lapham engaged in private practice of medicine (obstetrics) for a period of three years. During this time he served on the visiting staff, in obstetrics, of the Lying-in Hospital and of the University Hospital and also as instructor in obstetrics in the University of Pennsylvania School of Medicine.

In 1933, Dr. Lapham took up graduate medical extension teaching, giving courses of instruction in obstetrics for two years to the practicing physicians throughout the state of Virginia, under the auspices of the University of Virginia and with the cooperation of the Medical College of Virginia and the Virginia State Medical Society. During 1935 and 1936, he gave postgraduate extension courses in obstetrics to the practicing physicians in Mississippi, under a cooperative arrangement with Tulane University, the Mississippi State Medical Society and the Mississippi State Health Department.

Dr. Lapham was appointed in June 1937, as assistant professor of obstetrics in the School of Medicine of The Tulane University of Louisiana and as director of the Extension Division of the Department of Graduate Medical Studies. During his almost three years at Tulane he has actively participated in the teaching and hospital duties of his department (obstetrics) and has organized, promoted and directed extension courses in different subjects for the physicians of Mississippi. Similar courses have now been organized for the physicians of Alabama.

It is planned for Dr. Lapham, during the next few months, to continue his teaching duties and the direction of extension courses as usual. At the same time he will be getting thoroughly acquainted with the duties and responsibilities of his future position. For a period of a few months, beginning in the fall, he will take several travel tours, visiting many of the medical educational institutions in this country and some in foreign countries, for the purpose of thoroughly acquainting himself with the methods, problems and practices in those institutions.

Vanderbilt University
School of Medicine

Dr. Albert Szent-Györgyi, Director of the Institute for Medical Chemistry and Professor of Medical Chemistry at the Royal Hungarian Franz Joseph University at Szeged, Hungary, and winner of the 1937 Nobel prize in physiology and medicine, is the Abraham Flexner Lecturer at the Vanderbilt Medical School this year, having arrived at the School March 4th for a two months' period.

Dr. Szent-Györgyi delivered the following lectures during March: "General Principles of Biological Oxidation;" "Respiration of Muscle;" "Fermentation and Some Problems of Intermediary Metabolism;" "Vegetable Respiration;" and "On Vitamins, Health and Disease." During April, he will remain at the Medical School as visiting professor of biochemistry.

The Abraham Flexner Lectureship was established in 1927 by the brother of Abraham Flexner, Bernard Flexner, who wrote to the Chancellor, in establishing the endowment: "It is in my mind to set aside certain securities for the medical department of Vanderbilt University. I would like these securities to be held in trust as the 'Abraham Flexner Lectureship', the accumulated income to be used at intervals of two years or more as an honorarium to be given to some American or foreigner, highly distinguished in the field of the medical sciences; the lecturer to be in residence for the purpose of contact with faculty and students during a period of approximately two months, and to give a series of lectures, the number and character of which shall be determined by the lecturer himself and the University."

◆ ◆

Medical College of Virginia

Construction now under way at the Medical College of Virginia will involve an expenditure of something over $2,000,000.00.

This program includes remodeling the historic Egyptian Building, making it fireproof. This building in the future will house the departments of pathology and bacteriology, and will have an auditorium, seating four hundred, done in the Egyptian manner.

A fourth floor is being added to McGuire Hall which will furnish ultra-modern facilities for the departments of physiology and pharmacology.

A new eighteen story hospital for white patients to replace Memorial and Dooley Hospitals is under way. It is anticipated this will be ready for occupancy in the spring of 1940.

New and complete autopsy facilities are being provided adjoining the Egyptian Building.

The new dormitory of the college, completed for occupancy last July, with capacity for 147, has been named Hunton Hall in honor of the late Eppa Hunton, Jr., a member of the Board of Visitors and its executive committee for many years.

Dr. Patrick F. Drewry, Jr., has been appointed full-time assistant professor of neuropsychiatry. He is now in London for special study in this field under a fellowship from the Rockefeller Foundation. He will come to the college next spring when it is anticipated the new hospital, which will have an active psychiatric service, will be completed.

Dr. William T. Sanger, president of the college, was awarded the honorary degree of Doctor of Humane Letters by Bridgewater College on April 3, when he delivered the Founders' Day address at that institution, which is his alma mater. President Sanger will also be honored by the University of Richmond at its commencement on June 6, when the honorary degree of Doctor of Laws will be conferred upon him.

The college acted as host to the American Society of Bacteriologists and Pathologists when it met in Richmond April 5-6-7. Dr. Frank L. Apperly, professor of pathology, was chairman of the committee on arrangements.

Dr. Wilder H. Penfield, professor of neurosurgery, McGill University,

Montreal, Canada, was the Stuart McGuire lecturer this year. These annual lectures were scheduled for April 27 and 28. The annual spring postgraduate clinics were held on April 28.

A portrait of the late Dr. J. Allison Hodges, emeritus professor of clinical nervous and mental diseases, has been presented to the college by nieces of Doctor Hodges.

A gift of $1000.00 has been received from Mrs. Malcolm Perkins for a fellowship in immunology. Dr. Edwin T. Vaughan has been selected for the fellowship for the current year.

The Carnegie Corporation of New York has made a grant for an artist in residence here. Mr. George H. Murrill, a graduate in fine arts of Yale University, has been selected and is now at work on murals for the clinic and laboratory building. A series of murals is also being planned for the library building. The purpose of this work is two-fold, to develop a series of murals and to bring students of the four schools of the college informally under the influence of creative work to increase appreciation in this important cultural field.

Mrs. Annie R. F. Frayser recently made a gift of $2000.00 in memory of her son, the late Dr. Benjamin Hodges Frayser, establishing a loan fund for medical students.

◆ ◆

University of Western Ontario
Faculty of Medicine

A refresher course in anatomy will be given beginning about the middle of May and running for five weeks. The course will consist of dissection and a series of 30 lectures on selected topics. Fee, $15.

Dr. L. G. Rountree, 1905, director of the Research Institute of Philadelphia, has offered prizes amounting to $50 for essays by students on any phase of medical history.

The new Victoria Hospital, to be erected on the site of the present hospital, in which most of the clinical teaching is done, will contain the Meek Laboratory of Pathology for which the late Dr. Meek left a considerable sum of money. One hundred thousand dollars will be used toward the building of the laboratory and another one hundred thousand dollars will be used for endowment. The balance, more than $25,000, will be used for new equipment. For the new hospital there is available $680,000. Of this amount, $100,000 comes from the Meek estate. A similar sum has been voted by the Provincial government to the university for medical education. The rate payers of the city of London approved of an appropriation of $200,000, and out of the estate of the late Mrs. Hadley Williams there is provided about $280,000.

◆ ◆

University of California
Medical School

As part of the celebration commemorating the Seventy-First Charter Anniversary of the University of California, the Medical School held an Alumni Day program on March 22. The program was prepared by Dr. William J. Kerr, professor of medicine, with the assistance of associate professors, Stacy R. Mettier and Theodore L. Althausen and assistant professor, Evelyn A. Haymaker. In the morning, there were demonstrations, lectures and operative clinics and, in the afternoon, the alumni were taken to points of interest at the Medical Center, with the fourth year students acting as guides.

A short post graduate course on "Endocrinology and Related Metabolic Diseases" was given from April 5 to 8, at the University of California Hospital. This course was designed to meet the needs of physicians in private practice.

One of the current exhibits in the Crummer Medical History Library is an interesting collection of material on Sir Morell Mackenzie, the great English laryngologist and Emperor Frederick II of Germany

Dr. Samuel S. Maxwell, professor of physiology, emeritus, passed away late in January. He had been a member of

the department of physiology of the Medical School since 1905.

Dr. Alfred C. Reed, professor of tropical medicine, was guest speaker at the Dallas Post Graduate Clinical Society meeting held in Dallas, Texas, in March. He gave several lectures and seminars. In February, Dr. Jesse L. Carr, assistant professor of pathology, spoke at the Washoe County Medical Society in Reno, Nevada, on "Accidental Death — particularly from the Insurance Standpoint of what Constitutes Accidental Death."

February 11, 1939, Dr. Timothy Leary, professor of pathology, bacteriology and medical jurisprudence, Tufts Medical College, Boston, who was in San Francisco to speak before the California Academy of Medicine, delivered a lecture to the staff and students on "Traumatic Intracranial Hemorrhage."

◆ ◆

State University of Iowa
College of Medicine

Dr. Philip C. Jeans, professor of pediatrics, has received a grant of $7,500.00 from the Borden Company for the continuation of his investigations in infant nutrition. This grant was made available through the Council for Pediatric Research of the American Academy of Pediatrics.

Dr. Arthur Steindler, professor of orthopedic surgery, has received a grant of $8,500.00 from the National Foundation for Infantile Paralysis for the investigation of corrective surgical procedures in infantile paralysis.

◆ ◆

Baylor University
College of Medicine

Baylor announces the following grants made for research during 1939:

1. From Hoffman-La Roche, Inc., $1,000 for study of prostigmin-morphine potentiation, to Dr. Donald Slaughter, department of pharmacology.

2. From The Ciba Co., Inc., $500 for a study of trasentin on the urinary bladder and ureters, to Dr. Donald Slaughter, department of pharmacology.

3. From Committee on Scientific Research A.M.A. $500 for a study of the venoms of southern and southwestern scorpions, to Dr. H. A. Kemp, department of bacteriology and preventive medicine.

◆ ◆

Emory University
School of Medicine

Dr. Paul E. Lineback, professor of microanatomy and head of the department of anatomy for many years, died early in March after a long illness. Dr. Lineback had been a member of the faculty since 1917. He was well known in scientific circles and contributed much to knowledge in his special field.

◆ ◆

University of Minnesota
Medical School

Dr. Irvine McQuarrie, professor and head of the department of pediatrics, addressed the Montreal Neurological Society March 1st. The subject of his address was, "Physicochemical Studies on the Mechanism of Convulsive Phenomena."

The Annual Harold S. Boquist Lecture was delivered by Dr. Henry C. Sweany, Medical Director of Research, Chicago Tuberculosis Sanatorium, on April 4, 1939. Dr. Sweany's subject was "The Study of the Pathogenesis of Tuberculosis by Correlating Age and Morphology of Primary Tubercles."

Professor August Krogh and his wife, Dr. Marie Krogh, of the University of Copenhagen, were guests of the Medical School of the University of Minnesota for ten days (March 25 to April 4). During their visit Professor Krough presented lectures and seminars on the following subjects: "Osmotic and Ionic Regulation in Animals," "Circulatory Adjustment to Posture in Man," and "Comparative Physiology of Respiration." Dr. Marie Krogh presented a lecture on "Nutritional Problems in Denmark."

Dr. Gerald Taylor Evans, assistant professor of physiological chemistry, Yale University, has been appointed associate professor of medicine and

director of Chemical and Metabolic Laboratories, University Hospital, University of Minnesota.

◆ ◆

Long Island
College of Medicine

The third Adam M. Miller Memorial Lecture was delivered April 6 by Dr. George Hoyt Whipple, dean and professor of pathology, University of Rochester School of Medicine and Dentistry. The subject of the lecture was "Experimental Anemia and the Building of Hemoglobin in the Body."

◆ ◆

University of Illinois
College of Medicine

Announcement is made of the receipt of $35,000 from the Rockefeller Foundation for support of a program of teaching and research in psychiatry over a three year period.

Mead Johnson & Company have made available $1,900 for research by the department of pediatrics on the absorption, utilization and excretion of various carbohydrates used in the feeding of infants. The Abbott Laboratories have provided $1,000 to further research on anesthetics.

Phi Mu Phi, a musical fraternity whose membership consists of undergraduate medical students, gave its annual spring concert April 12th. This fraternity is said to be the only one of its kind in a medical college. It is comprised of a Men's Glee Club, a Woman's Glee Club, a Concert Orchestra and a Dance Orchestra. It was organized in 1932. There are thirty-five active members. Two concerts are given yearly.

◆ ◆

Duke University
School of Medicine

On March 1st, a lecture on "Drug Addictions" was given by Dr. Lawrence Kolb, Assistant Surgeon General of the U. S. Public Health Service, in charge of Mental Hygiene.

On March 8th, a motion picture film on industrial accidents and their care was shown by Dr. Henry H. Kessler, American authority on Cineplastic Surgery.

On March 9th, a lecture and motion picture on "Life Camps" was given by Dr. L. B. Sharp, Director of Life Camps.

March 24th and 25th, a Postgraduate Clinic on the Management of Syphilis, under the sponsorship of the North Carolina State Board of Health and Duke University was held. The following speakers appeared on the program:—Dr. John H. Stokes, of the University of Pennsylvania School of Medicine; Dr. Harold N. Cole, of Western Reserve University School of Medicine; Dr. W. P. Richardson, District Health Officer, Chapel Hill, N. C.; Dr. Wm. deB. MacNider, of the University of North Carolina School of Medicine; Dr. Joseph Earle Moore, of The Johns Hopkins University School of Medicine; Dr. Paul O'Leary, of the Mayo Clinic; Dr. Roy Norton, of the University of North Carolina School of Public Health; Dr. Carl V. Reynolds, of the North Carolina State Board of Health; Dr. R. A. Vonderlehr, Assistant Surgeon General, Chief, Division of Venereal Diseases; Dr. Norman R. Ingraham, of the University of Pennsylvania School of Medicine; Dr. P. C. Jeans, of the University of Iowa School of Medicine, and Dr. E. R. Hardin, Health Officer, Lumberton, N. C.

April 13th, John Elliott, of Salisbury, N. C., gave a lecture to the staff and students in the Hospital Amphitheatre on Blood and Plasma Transfusion.

April 17th, Dr. E. Fullerton Cook, Chairman of the U. S. Pharmacopeia Revision Committee, lectured on "The Physician and The Pharmacopeia."

◆ ◆

University of Arkansas
School of Medicine

The Arkansas legislature granted to the University of Arkansas Medical School at Little Rock an increase in its annual appropriation from $70,000.00 to $300,000.00 a year. In addition, it is expected that the school will receive

$50,000.00 to $55,000.00 a year from the twin cities of Little Rock and North Little Rock and from Pulaski County.

The large increase in the appropriation was granted chiefly for the purpose of enabling the school to take over, at a rental of one dollar a year, the Little Rock City Hospital, a 200 bed institution, adjoining the Medical School. Dean Frank Vinsonhaler has tendered his resignation effective July 1, next, and has been named Dean Emeritus as of that date. The Trustees expect to have a new Dean selected and installed as soon after July 1 as possible.

◆ ◆

Meharry Medical College

A closer affiliation between Meharry and Fiske University is contemplated. Special attention will be paid to the medical library which is housed in the Fiske Library. Students will be given opportunity to take advantage of combined courses leading to the B.S., M.D. and A.B., M.D. degrees.

◆ ◆

Woman's Medical College of Pennsylvania

March 9, 10 and 11, 1939, the Eighty-ninth Anniversary of the Founding of the College (March 11, 1850) was celebrated.

During the past year the institution has been named as beneficiary in the following bequests:

From the estate of Dr. Jane Jenks Southern, Class of 1889, $25,000, and, in addition, the College has an interest in the residuary estate after completion of certain life trusts.

From the late Dr. Margaret P. Forcee-Kuyk, Class of 1891, her entire estate, estimated to have a value of $15,000, for the endowment of the department of preventive medicine.

From the estate of Miss Maria Logan of Germantown, Philadelphia, $5,000.

From the estate of George Montgomery, of New York City, $7,500 to establish a scholarship in the name of his deceased wife, Clara Babbitt Hyde Montgomery.

The Trustees of the William E. Sellers Estate have allocated $20,000 from that estate to the Hospital of the College, the income thereof to be used for the care of women and children in that institution.

◆ ◆

University of Chicago Medical School

The Rockefeller Foundation has made a grant of $2,000 to continue for the year 1939 the studies in malaria conducted by William H. Taliaferro, Ph.D., chairman of the department of bacteriology and parasitology, and dean of the Division of Biological Sciences, The foundation has supported the work of Dr. Taliaferro and his associates for a number of years. The studies are concerned with analysis of the mechanisms by which the body resists malarial infection and with the physiologic and genetic studies of the mosquitoes which transmit malaria and of malarial parasites.

◆ ◆

Hahnemann Medical College

The new $450,000 unit of the college was dedicated February 28th. Dr. Walter C. Alvarez, professor of medicine in the Mayo Foundation of the University of Minnesota, delivered the dedication address. Mrs. Emilie F. Klahr gave the money for the construction of this unit in memory of her husband. The building contains an auditorium, five laboratory floors and lecture rooms.

◆ ◆

University of Rochester School of Medicine

Dr. Jerome T. Syverton has been promoted from assistant to associate professor of bacteriology.

Dr. S. W. Clausen has been appointed a member of the Mead Johnson "Vitamin A" award committee.

Dr. Samuel J. Stabius is the first president of the newly organized Society of University Physicians.

University of Vermont
College of Medicine

Twenty-two students have been selected for the freshman class of 1939. Ten more students will be selected in June from the lists of deferred candidates. One woman was admitted to the class of 1943. All of the twenty-two admitted, except two, are at present students in the undergraduate colleges of the University. Twelve are residents of Vermont. This is in accordance with the policy of the College of giving first consideration to Vermonters. Selections were based, first on scholastic record; second, score in the medical aptitude test; third, character and personality.

◆ ◆

University of Alabama
School of Medicine

The University of Alabama Chapter of Society of the Sigma Xi was installed on April 4th. Dr. Edward Ellery, National Secretary of Sigma Xi, gave an address on, "The Urge to Know and Academic Freedom," at a special morning convocation. Dr. George A. Baitsell, National President of Sigma Xi gave a lecture on "Uniformity in Nature" immediately after the banquet. During the formal installation exercises, the following were elected as officers of the new chapter:

President, Dr. Emmett B. Carmichael, Professor of Physiological Chemistry; Vice-President, Dr. J. D. Mancill, Assistant Professor of Mathematics; Secretary, Dr. E. F. Richards, Assistant Professor of Geology; and Treasurer, Mr. B. W. Gandrud, Metallurgist, U. S. Bureau of Mines, Southern Experiment Station, Tuscaloosa.

The Medical Association for the State of Alabama, on April 19th, unanimously approved the recommendation of President Seale Harris and the State Board of Censors that the Association work for the reestablishment of a four-year school of medicine in Alabama. The public meeting of the Association this year was devoted to the subject of the four-year school of medicine. Lt. Gov. A. A. Carmichael declared that the School was needed and that he would support it. Dean Stuart Graves of the School of Medical Sciences at the University reviewed the needs for a four-year school of medicine in the state and President Richard C. Foster of the University announced that the University will be glad to assume responsibility for its organization and administration whenever the state can provide funds.

The Alumni Association of the Medical Department of the University has a standing committee working for the project which consists of Dr. W. D. Partlow, former President of the State Association and former Chairman of the State Board of Censors; Dr. E. V. Caldwell of Huntsville, former President of the State Association and at present Chairman of the State Board of Censors; Dr. Samuel A. Gordon of Marion and Dr. J. P. Collier of Tuscaloosa, both ex-presidents of the Medical Alumni Association. The first three members of the committee are current members of the State Board of Censors.

The Association at its annual meeting dedicated in front of the State Capital a bronze statue of Dr. J. Marion Sims, "The Father of Modern Gynecology."

Dr. James R. Garber of Birmingham presided and addresses were made by Dr. M. Y. Dabney of Birmingham and Mrs. Marie Bankhead Owens, State Director of Archives and History.

◆ ◆

University of the Philippines
College of Medicine

In view of the fact that the College has received applications for admission from foreigners, especially from the United States, which is likely to strain the facilities of the College and interfere with its stated policy to devote itself to the education of local residents, the following notice is being sent to such applicants:

It is our desire to produce useful and forceful physicians irrespective of nationality, hence in selecting an applicant we consider not only his scholastic records and recommendations but also the result of personal interview. Since

personal interview with students in foreign lands is not practical, we are therefore constrained to reject their applications for admission. If an applicant, however, has been accepted by one of the Class A colleges of medicine, which is a member of the Association of American Medical Colleges, and he desires to enter our College of Medicine for a good reason, we may consider his application, otherwise we shall not consider it, for we believe that, unless he is good enough for a reputable school of medicine, he is not good enough for us.

◆ ◆

Loyola University
School of Medicine

Dr. Henry Schmitz, professor and head of the department of obstetrics and gynecology, died April 17th, from pneumonia. Dr. Schmitz was well known for his work on the treatment of cancer of the uterus with the roentgen ray as well as for his many valuable contributions in the field of gynecology. Dr. Schmitz had been a member of the faculty of Loyola for more than twenty-five years.

◆ ◆

University of Michigan
Medical School

Over 45 per cent of the students in the medical school are partially or totally self-supporting. Records show a great variety in types of employment. Thirty-one of the students are clerks or coders, 19 are waiters, 17 are laboratory assistants, and 15 are kitchen helpers. Bacteriologists, chauffeurs, research assistants, salesmen, tutors, and typists are included among the medical student workers.

◆ ◆

Meharry Medical College

Dr. Michael J. Bent, professor of bacteriology, has been appointed associate dean.

Many of the younger members of the faculty are on leave of absence for a year of study in their special fields of activity at recognized institutions. Doctor Silcott, of the department of neurology and psychiatry, will spend the year with Dr. Ebaugh at the Colorado Psychiatric Hospital. Dr. Faulkner, of the department of pediatrics will continue his studies at Harvard. Dr. Scott, of the department of roentgenology, is spending his time with Dr. Kaplan of New York City.

Dr. Hamilton, assistant professor of dermatology at Vanderbilt University School of Medicine, has been appointed head of the department of dermatology at Meharry. Dr. LaSaine has returned from the University of Toronto where he was doing special work in public health and preventive medicine. He will head this department at Meharry. Dr. Walker is doing special work in surgery at Howard University. Dr. Freeman returned to Meharry after spending a year in the department of orthopedic surgery at the State University of Iowa.

The Postgraduate Course, under the direction of Dr. W. S. Quinland, professor of pathology, was more intensive this year than in preceding years. Courses in many subjects were offered. Lectures and clinics by members of the Vanderbilt faculty, such as Drs. Leathers, Morgan, Youmans, Cate, Lowenstein and McFall, were included in the program. The course was of two weeks duration, was limited to twenty students. The fee was $20.

◆ ◆

University of Oregon
Medical School

Dr. Norman David, of the department of pharmacology, has been awarded a grant of $1,200 by Eli Lilly & Company, Indianapolis, to aid in carrying on investigations on the effects of long continued administration of barbiturates to animals and to study the water soluble hormone of the testes.

◆ ◆

George Washington University
School of Medicine

Dr. Anton J. Carlson, professor of physiology in the University of Chicago, addressed the Smith-Reed-Russell Society April 25th. His subject was, "Notes on Medical Education and Medical and Public Health Services in Russia and in China.

General News

University of Istanbul

This university was founded in 1909. It consists of five faculties, namely, medicine, law, economics, philosophy, and science. Turkish as well as European scholars serve in each of these faculties. Each faculty is administered by a Dean, the whole University by a Rector, all of whom are appointed by the Minister of Public Education. The curriculum corresponds to that of an American or European university, at the same time being adapted to the particular needs of Turkey. The medical faculty considers special maladies of Anatolian Turkey such as tropical fever, malaria and trachoma.

The number of research institutes erected since 1933 and equipped with the most modern apparatus is amazing. The faculty of medicine has a new ophthalmic hospital, surgical hospital, a hospital for internal maladies and a large institute for x-ray and radium therapeutics. Other institutes such as those for hygiene, bacteriology, pharmacology, and physiology, which were previously in existence, have been newly equipped. Institutes with special libraries are attached to all faculties where students have an opportunity of collecting information from European and American scientific works.

The general course of study at the University of Istanbul lasts four years; that of medicine five years. Medical students may practice at once, since the last year of their course is devoted to their intern service. Only one third of the medical students are able to pay tuition fees. Of the other two thirds, who study at public expense, half are from the most able in the military service who intend to become army surgeons; the other half are supported by the Ministry of Hygiene and in return for their support must practice for several years in Anatolian Turkey. From the beginning of their studies the students are prepared weekly for their military service. This exercise is counted as half a year towards the compulsory military service that has to be rendered immediately after graduation.

News Bull. Internat. Inst. of Educ., 14:6 (Dec.), 1938.

◆ ◆

University of Wisconsin Cancer Research

Research on cancer at the University of Wisconsin is to be centralized in a new building for which funds amounting to about $240,000 have been provided by a special bequest, by a contribution from the Wisconsin Alumni Research Foundation and a PWA grant of $108,000. It will be connected with the Memorial Service Institutes of the university and Wisconsin General Hospital. Two floors will be devoted to biologic research, one to x-ray diagnosis and the first floor to radiologic research and treatment. The entire development is being directed by a graduate school committee consisting of Drs. William S. Middleton, dean of the medical school, chairman; Edwin B. Fred, Ph.D., dean of the graduate school and Michael F. Guyer, Ph.D., professor of zoology. Walter J. Meek, Ph.D., professor of physiology and associate dean of the medical school, is chairman of the building committee.

◆ ◆

Southwest Medical Foundation

The Southwest Medical Foundation is to be established under a charter granted by the state January 21 as a nonprofit corporation with no capital stock. The incorporators were Drs. Edward H. Cary and Hall Shannon, Mr. E. R. Brown and Mr. Karl Hoblitzelle, all of Dallas. The charter provides for a maximum of fifteen trustees. Besides those named as incorporators, the trustees include Herbert Marcus

and Rhodes S. Baker, Dallas; Jesse H. Jones and R. C. Fulbright, Houston, and Thomas O. Walton, LL.D., president of Agricultural and Mechanical College of Texas, College Station. The aims of the foundation are to establish facilities and clinics for the study of the causes, the prevention and the cure of diseases of the minds and bodies of needy persons residing in the Southwestern section of the United States and elsewhere, and to develop and train laboratory workers, physicians and nurses in the treatment of diseased persons, to study individual and community hygiene and to promote public health and medical research. An endowment will be sought, it was said, but the amount has not been determined. The foundation will be nonsectarian and noninstitutional, seeking to spread its benefits where they are most needed. It will finance work at Baylor University, Dallas, as well as elsewhere in the Southwest. Dr. Cary has been elected president; Mr. Brown and Mr. Hoblitzelle, vice presidents; Dr. Shannon, secretary, and Mr. Marcus, treasurer.

◆ ◆

Catholic Hospital Association

The twenty-fourth annual convention will be held in Milwaukee, Wisconsin, June 12-16, 1939, under the presidency of the Reverend Alphonse M. Schwitalla, 1402 South Grand Boulevard, St. Louis, Missouri.

◆ ◆

American Association of Industrial Physicians and Surgeons

The 24th Annual meeting of the American Association of Industrial Physicians and Surgeons with the American Conference on Occupational Diseases and Industrial Hygiene will be held at the Hotel Statler, Cleveland, Ohio, June 5, 6, 7 and 8, 1939. A program of timely interest and importance will be presented by speakers of outstanding experience in all of the medical and engineering problems involved in industrial health. A cordial invitation is extended to all whose interests bring them in contact with these problems. Information regarding hotel accommodations, etc., may be obtained from A. G. Park, Convention Manager, 540 North Michigan Avenue, Chicago.

◆ ◆

Prize for Thesis in Obstetrics

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons offers a prize of $100 for a thesis. Those eligible to compete are (1) interns, residents or graduate students in obstetrics, gynecology and abdominal surgery, and (2) physicians who are actually practicing or teaching obstetrics, gynecology or abdominal surgery. Competing manuscripts must be presented in triplicate under a nom de plume to the secretary of the association before June 1, must be limited to 5,000 words and such illustrations as are necessary for a clear exposition of the thesis and must be typewritten (double spaced) on one side of the sheet, with ample margins. The successful thesis must be presented at the annual meeting of the association in September without expense to the association and in conformity with its regulations. For further details address Dr. James R. Bloss, Secretary, 418 Eleventh Street, Huntington, W. Va.

◆ ◆

Alabama Board Regulations

The Alabama State Board of Medical Examiners recently amended its rules governing the issuance of certificates of qualification to practice medicine. After the collegiate year 1938, any applicant for a certificate to practice will be required to serve at least one year of internship before such certificate will be issued. He will be permitted to take the examinations but the certificate will be withheld until the applicant complies with this requirement. Concerning graduates of European schools, the regulations read:

In the case of an applicant, whether native born or foreign born, who has graduated from a European School, the following rules shall obtain:

1. Present a certified statement from the National Board of Medical Examiners of the United States setting forth that he has successfully passed all examinations, written and oral, required by this board; and

2. Either (a) present a certificate of qualification to practice medicine (a license) issued in the country of his nativity or in the country in which the medical school from which he graduated is located or (b) present a certificate setting forth that he has satisfactorily passed the federal examinations necessary to obtain licensure to practice medicine in the country in which the medical school from which he graduated is located.

All foreign born applicants shall first present at least first citizenship papers.

◆ ◆

Universities with Largest Research

Universities of the nation that have the largest expenditures for research of all kinds are California, Chicago, Columbia, Harvard, Illinois, and Michigan, according to a survey contained in the report of the National Resources Committee. These six schools spend over $2,000,000 a year each on research. In the group spending between $1,500,000 and $2,000,000 a year for research are Cornell, Minnesota, Wisconsin, and Yale. In the $1,000,000 to $1,500,000 brackets are four schools: Massachusetts Institute of Technology, New York University, the Ohio State University, and the University of Pennsylvania. Spending between $500,000 and $1,000,000 yearly for research are Duke, University of Iowa, Iowa State College, Johns Hopkins, Missouri, Nebraska, Northwestern, Pennsylvania State College, Princeton, Purdue, Rochester, Rutgers, Stanford, and Texas A. and M. The list, states the report, is not complete, and the estimates are probably too low rather than too high. —*The Diplomat,* April, 1939.

◆ ◆

The Society for Investigative Dermatology

The Society for Investigative Dermatology and the Journal of Investigative Dermatology are serving to bring together scientific investigators who are particularly interested in studies in dermatology and venereology and in using the skin as a test tissue for the study of fundamental problems.

In accordance with the By-laws, membership is open to any person who is a physician in good standing, or who is engaged in teaching or in scientific research in medicine or allied subjects in a reputable university, college, laboratory, hospital or other institution.

The second annual meeting of the Society will be held in St. Louis, May 16, 1939.

Membership applications may be obtained by writing to the Secretary, Dr. S. W. Becker, School of Medicine, University of Chicago, Chicago, Illinois.

◆ ◆

McKinley Memorial Library

Mrs. Earl Baldwin McKinley, widow of Dr. Earl Baldwin McKinley, who lost his life on the Hawaii Clipper last summer, has given to the Leonard Wood Memorial (American Leprosy Foundation) Dr. McKinley's medical library.

This gift has been accepted with deep appreciation by the Medical Advisory Board of Trustees of the Foundation and is to be placed in the Culion Library at Culion, Philippine Islands. The collection will constitute the "Earl Baldwin McKinley Memorial Library." The Leonard Wood Memorial intends to keep the library active by subscribing for the various journals which are now included in it.

Book News

Surgical Anatomy

By C. Latimer Callander, M.D., Associate Clinical Professor of Surgery and Topographic Anatomy, University of California Medical School. With a Foreword by Dr. Dean Lewis. 2nd Ed. W. B. Saunders Company, Philadelphia. 1939. Price, $10.

This is a surgical, not a regional or applied anatomy text. The anatomy of the organ or region is considered first; then its surgical application is discussed; principles and anatomy of the commoner operations and finally steps in sequence are illustrated. The book indicates the paths of surgical approach to the pathologic process which is to be removed or corrected. More than 800 illustrations amplify and clarify the text. A fine book for the surgeon or for him who would be a surgeon with approved preparation.

◆ ◆

William B. Wherry: Bacteriologist

A Biography, written by Martin Fischer, Professor of Physiology, University of Cincinnati. Charles C. Thomas, Springfield, Illinois. 1938. Price, $4.

A beautiful book about a beautiful character, a lovable person, who did much to advance the subject of bacteriology although without the usual fanfare of trumpets. He worked because he loved his work. His first thought in doing was to do something worth while for his fellow man. Fischer portrays this man as only Fischer can make a portrayal, especially of one whom he admired and loved. Wherry achieved great things for his own pleasure but more so for the good of his fellow man. The publisher deserves praise for having produced so beautiful a book. It is a work of art in every respect, one worthy of its subject.

A Synopsis of Medicine

By Henry L. Tidy, M.D., Consulting Physician to St. Thomas' Hospital, London. 7th Ed. William Wood & Company, Baltimore. 1939.

The text is well "synopsized," presenting each topic in easily read and succinct manner so that the student can find quickly concise data for use as a review or for original study of many disease entities. It is a condensed encyclopedia of what he must know about diseases.

◆ ◆

Whitla's Dictionary of Treatment

Including medical and Surgical Therapeutics. By Dr. R. S. Allison, Physician to Outpatients, Royal Victoria Hospital, and C. A. Calvert, Assistant Surgeon, Royal Victoria Hospital, Belfast, Ireland. 8th Ed. William Wood & Company, Baltimore. 1939. Price $9.

A good book for the student who wants to know more about the treatment of patients. Principles are stressed; only such remedies as have been found useful after much experience with them are included. A safe guide for the student.

◆ ◆

Chemical Analysis for Medical Students

Qualitative and Volumetric. By R. E. Illingworth, Ph.D., Lecturer in Chemistry, School of Medicine, Royal Colleges, Edinburgh. With a foreword by G. Barger, Sc.D., Regius Professor of Chemistry, University of Glasgow. William Wood & Company, Baltimore. 1938. Price, $1.50.

A book which college students will appreciate. Medical students have had this course before entering the medical college.

Surgical Treatment of Hand and Forearm Infections

By A. C. J. Brickel, M.D., of the Department of Anatomy and Surgery, Western Reserve University. The C. V. Mosby Company, St. Louis. 1939. Price, $7.50.

The late Dr. T. Wingate Todd inspired this research and vouched for its worth. Anatomy is the basis of the text. Selected dissections are portrayed beautifully by means of color plates. Numerous black and white illustrations add much to the clarity of the text. The text covers the general principles of infection of the hand and the routes by which it spreads, anesthesia, physiotherapy, bites and medicolegal considerations. It is a very fine piece of work and is presented splendidly.

◆ ◆

Emotions and Bodily Changes

Survey of Literature on Psychosomatic relationships, 1910-1933. By Dr. H. Flanders Dunbar of the Departments of Medicine and Psychiatry, Columbia University. 2nd Ed. Columbia University Press, New York City. 1938. Price, $5.

This book is essentially a bibliography, representing an attempt to bring together in some sort of perspective the research material that has combined to develop those concepts in medicine which are the necessary foundation for further research in the sphere of psychosomatic problems. It is made up of three sections. Part I deals with orientation and methodology. Part II summarizes the literature relating to emotions and organs or organ systems. Part III contains therapeutic considerations and concluding remarks. The supplementary introduction reviews the developments since 1933. And the additional bibliography is intended to exemplify the literature that has accrued since 1933. Otherwise, the second edition is a reprinting of the first. This book is a valuable reference work for the specialists in the fields of psychiatry, neurology, and of psychosomatic interrelationships.

Biochemistry for Medical Students

By William V. Thorpe, Ph.D. Reader in Chemical Physiology, University of Birmingham, England. William Wood & Company, Baltimore. 1938. Price, $4.50.

The author has tried to give what the medical student may want to know, omitting that which he is never likely to require. Therefore, this a concise, carefully selected presentation which the medical student will welcome, and the book is within reach of his pocketbook. Would that there were more texts of this type.

◆ ◆

The Principles and Practice of Ophthalmic Surgery

By Edmund B. Spaeth, M.D., Associate Professor of Ophthalmology in the Graduate School of Medicine, University of Pennsylvania, etc. Lea & Febiger, Philadelphia. 1939. Price, $10.

This is a complete text on the surgery of the eye, covering every phase of the subject. It is illustrated profusely by means of color plates and many diagrams depicting steps of operations. The book should be an effective guide for such men as are planning to be ophthalmic surgeons. It is beyond the undergraduate student.

◆ ◆

Student's Handbook of Surgical Operations

By Sir Frederick Treves. 6th Ed. Edited and Revised by Cecil P. G. Wakeley, F.R.S.C. Director of Surgical Studies and Teacher of Operative Surgery, King's College Hospital Medical School, London. Paul B. Hoeber, Inc. Medical Book Department of Harper & Brothers, New York. 1939. Price, $5.

This is a good book for the student, small in size, with full coverage of the subject; descriptions are easily comprehended and elucidated by many illustrations.

Symptoms and Signs in Clinical Medicine

An Introduction to Medical Diagnosis. By E. Noble Chamberlain, M.D., Lecturer in Medicine, University of Liverpool; with a chapter on the Examination of Sick Children by Norman B. Capon, M.D., Lecturer in Diseases of Children, University of Liverpool. 2nd Ed. William Wood & Company, Baltimore. 1938.

Students will find this book useful to help them to prepare a good history and to make a proper physical examination. The chapter on the external characteristics of disease is good. The various "systems" of the body are dealt with separately as is fever, medical operations and instrumental investigations, clinical pathology and biochemistry. One chapter deals with the examination of sick children. The book is well illustrated.

◆ ◆

Gross Anatomy

A Brief Systematic Presentation of the Macroscopic Structure of the Human Body. By A. Brazier Howell, Associate Professor of Anatomy, Johns Hopkins University School of Medicine. D. Appleton-Century Company, New York. 1939. Price, $6.

The author has endeavored to present the subject from the standpoint of how anatomy is taught today because of curtailment of hours, changes in forms of pedagogy, etc. He stresses the underlying principles of the subject, clarifies the points which puzzle students and over which they needlessly expend much of their limited time. He omits much of the trivial detail which students are unable to assimilate. It concerns gross anatomy only; no histology, sufficient neurology, chiefly peripheral, for a proper understanding of the gross field. At Johns Hopkins, 320 hours are allotted to gross anatomy. This book is intended to be a guide for that course. At last anatomy is accepting the demands of present day medical pedagogy necessitated by the time available in a four year medical course. Furthermore, medical students do not, as a rule, intend to become anatomists. They intend to become practitioners of medicine. For these, this book is useful. Future anatomists must study more and more, for longer and longer, with no thought for hours or the size of textbooks.

◆ ◆

Clinical Biochemistry

By Abraham Cantarow, M.D., Associate Professor of Medicine, Jefferson Medical College, and Max Trumper, Ph.D., Clinical Chemist and Toxicologist. With a Foreword by Hobart A. Reimann, M.D., Professor of Medicine, Jefferson Medical College. 2nd Ed. Revised. W. B. Saunders Company, Philadelphia. 1939. Price, $6.

Laboratory data are correlated with clinical findings on the basis of personal experience with a considerable amount of clinical material. The subject of functional diagnosis by means of chemical methods is discussed in considerable detail. The technic of laboratory methods receives scant consideration. The book is intended to be essentially practical, presenting only those phases of biochemistry which are concerned with problems commonly encountered in clinical medicine. There is no bibliography and very few references.

◆ ◆

Clinical Gastroenterology

By Horace W. Soper, M.D., St. Louis. C. V. Mosby Company, St. Louis. 1939. Price, $6.

An attempt to cover the field, with emphasis on diagnosis and treatment; written for the specialist, internist and general practitioner. Well written; well arranged; well illustrated.

◆ ◆

The Vaginal Diaphragm

Its Fitting and Use in Contraceptive Technique. By LeMon Clark, M.D., Chicago. C. V. Mosby Company, St. Louis, Missouri. 1939. Price, $2.